Essays on Social Cohesion

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Content

Introduction

In many societies all around the world, social cohesion is under attack. In the early 20s of the 21st century, we witness heated armed conflicts in Ukraine, Israel and Gaza, Sudan, Yemen, and other regions. In many countries who are currently not experiencing armed conflict, affective polarization — defined as the extent to which citizens feel more negatively toward other political parties than toward their own — is increasing as for instance in the US (Boxell, 2022). Moreover, looking on the global level, it is unclear whether we will see substantial progress in the next years and decades with regards to challenges that require international cohesion and cooperation such as climate change, biodiversity loss, and AI regulation.

These challenges on the local, national, and international level lead to the question what can be done to strengthen social cohesion in different contexts in order to mitigate conflict and foster cooperation. Social cohesion is a complex construct and while there is no universally accepted single definition, it is a state that can be characterized by altruism, the willingness to cooperate, and shared social bonds and identities. Since social cohesion is threatened by many developments, it is important to analyze its causes and consequences and what can be done to effectively strengthen it. In this dissertation, I present three studies that contribute to this goal and analyze social cohesion from different angles.

Chapter 1 is based on the paper "Fragile Democracy: Polarization and Diminishing Acceptance for Outgroup-Made Restrictions" and is joint work with Dr. Christoph Feldhaus and Prof. Dr. Matthias Sutter.[1] In the US context, the unwillingness to accept outgroup control is a serious threat for democracy (Graham and Svolik, 2020) as for instance the capitol attack on January 6th, 2021 demonstrated. However, it is unclear whether resistance against outgroup control is due to the content of the specific restrictions the outgroup might implement or also due to a general preference against being restricted by the outgroup. Both possibilities carry different policy implications. If resistance against being restricted by the outgroup is solely due to the specific content of the restrictions, it might be necessary to compromise on the content of restrictions in order to reach acceptance. If resistance against outgroup restrictions is also due to a general dislike against being restricted by the outgroup,

[1] Author contributions: Conceptualization: CF, LR, MS; Designing the Experiment: CF, LR, MS; Funding acquisition: CF, LR, MS; Data Analysis: LR; Writing – original draft: CF, LR Writing – review and editing: CF, LR, MS.

strengthening of shared identities might also decrease resistance against outgroup restrictions. Moreover, if a general dislike against being restricted by the outgroup plays a role, the power of factual arguments in favor of certain restrictions might be limited and communicative efforts aimed at re-conciliation and unity might have higher chances of reaching the outgroup than attempts to convince them with factual arguments.

In the paper I present in chapter 1, we show in an online experiment that US subjects have a general preference against being restricted by the outgroup. We showed that subjects are more likely to lift identical choice restrictions by bearing a personal cost if these restrictions were imposed on them by an outgroup member rather than an ingroup member. We used Trump Haters and Trump Lovers as naturally occurring groups. We also present evidence on mechanisms. First, subjects report an intrinsic motivation to be independent from outgroup control. Second, subjects believe that the intentions behind identical restrictions are more malevolent if an outgroup member rather than an ingroup member imposed them. If we control for believed intentions of the interventionist, the treatment effect vanished completely suggesting that beliefs in the intentions of the interventionist could be an important channel.

Chapter 2 is based on the paper "Overcoming Polarization through Simple Conciliatory Messages". Diverging viewpoints on important policy issues (often referred to as *ideological polarization*) can be an important ingredient of a lively democratic discourse. However, hostilities, hate, and disrespect between major political factions (often referred to as *partisan animosity*) complicate open dialogue in the service of finding the best way forward for the country through a respectful competition of ideas in the political marketplace. In the paper presented in chapter 2, I analyze the effectiveness of two communicative strategies to improve relations between Democrats and Republicans with a US sample. I test whether i) acknowledging good intentions of the other side ("*Good Intentions*") and ii) acknowledging that the own side has also contributed to hate and polarization ("*Sharing Blame*") can improve relations between both sides. I found that subjects have better attitudes (defined as an index of altruism, trust, closeness perceptions, and openness to friendship) towards outgroup members who support one of these two statements (compared to outgroup members without further information on their opinions on the messages) even though all presented outgroup members support most policies of their favored party. Thus, the two statements are effective at improving relations to the outgroup

without concessions on policy views.

However, I found that subjects have worse attitudes towards ingroup members who support one of the messages (compared to ingroup members without further information on their opinions on the messages). As in the case of presented outgroup members, I informed subjects that all presented ingroup members support most policy views of their favored party. With regards to mechanisms, I found that subjects' beliefs about the altruism of the respective presented persons towards them follow the same patterns as subjects' attitudes towards the presented persons. Thus, the messages seem to signal less hostility if an outgroup member supports them and less ingroup solidarity if an ingroup member supports them.

Chapter 3 is based on the paper "Why Care For Humanity?" and is joint work with Prof. Dr. Harvey Whitehouse.[2] Many problems of the 21st century such as climate change, biodiversity loss, international security, and AI regulation require global solutions. In the absence of globally binding rules, countries have an incentive to free ride on efforts of others and contribute less than the efficient amount to global public goods. We argue that global identity can potentially contribute to global cohesion and to tackling many global problems. While there is a large literature on the power of local, ethnic, or national identities to foster social cohesion and cooperation with the local, ethnic, or national group, there is much less literature on global identity. A feature that distinguishes global identity from more narrow group identities is that there exists no human outgroup if all of humanity is the ingroup. Therefore, global identity cannot be strengthened by intergroup conflict or competition or perceptions that the ingroup is somehow different compared to outgroups.

In the paper, we explore the power of two pathways to strengthening global identity: globally shared transformative life experiences and perceptions of globally shared biology. Previous literature in social psychology and social anthropology has demonstrated that shared transformative experiences and perceptions of shared biology are particularly powerful pathways to group bonds on tribal, ethnic, or national levels and we explore whether both also work on a global level. We present two studies, each exploring one of these two pathways. In the first study we focus on globally

[2]Author contributions: Conceptualization: LR, HW; Designing the Experiment: LR, HW; Funding acquisition: HW; Data Analysis: LR; Writing – original draft: LR, HW; Writing – review and editing: LR, HW.

shared motherhood experiences. While motherhood experiences are not truly universal experiences since they are not shared by non-mothers, they transcend ethnic, national, and political boundaries. We see our study as a foundation for future work focusing on other experiences that are perhaps even more universal. We found in the first study that mothers are more bonded with and allocate more money towards other women all around the world if they share motherhood experiences with them.

In the second study, we used exposure to a talk about globally shared biology and common ancestors which makes every human part of a global family in a real biological sense as a treatment in a between subject design. We found that exposure to the talk increased global identity. We also found that exposure to the talk increased identification with the nation, the political outgroup, and the extended family (but not with the immediate family where shared biology is already highly salient). Therefore, we show that strong forms of global identities can go hand in hand with other identities without crowding them out. Thus, we show that there is no zero-sum relationship between these identities. Moreover, the fact that exposure to the talk also fostered bonding with the political outgroup (as well as money allocations to the outgroup in a bystander money allocation task) shows that notions of globally shared biology might not only strengthen global identity but can also help to mitigate internal conflicts.

Chapter 1

Fragile Democracy: Polarization and Diminishing Acceptance for Outgroup-Made Restrictions

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Abstract

A core prerequisite of a functional democracy is that citizens are, in general, willing to accept rules and regulations even if they are imposed by members of a political outgroup. However, in contexts with strong polarization (like currently the US) it is unclear whether resistance against outgroup-made restrictions is due to concerns about the restrictions' *specific content* or also due to a *general preference against being restricted by the outgroup*. In this paper, we develop a method to measure the latter channel and show that it carries substantial weight. In our experiment, subjects resist *identical* choice restrictions more strongly if they were imposed by a member of the political outgroup rather than the ingroup. This is so, because, first, subjects indicate that they have a stronger intrinsic motivation to resist choice restrictions if they are imposed by an outgroup member. Second, subjects believe that the intentions behind restrictions are more malevolent if the restrictions are imposed by an outgroup member.

Keywords: Choice restriction, Social identity, Outgroup, Polarization, Experiment
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1. Introduction

Functional groups, like democracies, firms and non-governmental organizations, need members who are willing to accept, in general, the rules and regulations governing social interaction. This includes the willingness to accept restrictions that are imposed by members of the group with whom a person does not share a joint (political or professional) identity. Heavy polarization between different factions within an overarching group - like in current US politics, for example, or during the Brexit referendum in the UK - may make it difficult to ensure acceptance for restrictions that are set by opposing factions which might be especially important in times of crisis where tradeoffs between swift action and civil liberties occur (Nunn, Qian, and Wen, 2018; Alsan et al., 2023). Thereby, pronounced polarization may increase resistance against restrictions implemented by a political outgroup which potentially threatens the functioning of the democracy (Finkel et al., 2020; Graham and Svolik, 2020).

Such resistance may, at first sight, be mainly ascribed to the *specific content* of the restrictions as the political ingroup likely suggests policies that are more in line with a person's view. However, there is another potential reason for resistance. That is, subjects may also have a *general preference against accepting outgroup-made restrictions*. So far, it is unclear whether and to what extent this second reason may generate resistance against restrictions. However, it is important to learn about this, because both potential reasons carry different policy implications. If the resistance against outgroup-made restrictions stems solely from their content, then it would be necessary to compromise on the content of the restrictions in order to reach acceptance of the outgroup. If resistance against outgroup-made restrictions stems also from a general dislike against accepting outgroup-made restrictions, then compromising on the content of restrictions alone may not be sufficient to reach acceptance. In these cases, it is the perception of the outgroup that makes resistance a goal per se, which then calls potentially for strengthening shared identities that mitigate animosity between the factions.

In this paper, we develop a method to identify the extent to which subjects have a general preference against accepting outgroup-made restrictions by showing a much stronger resistance against *identical* choice restrictions if these are imposed by political outgroup members rather than by political ingroup members. Holding the content of the choice restrictions constant, we measure causally whether the identity of the creator of a choice restriction matters for the resistance against it. We use supporters and opponents of former

US president Donald Trump as natural groups and recruit samples of US citizens from both sides of the political spectrum on Prolific. Trump supporters and opponents are well suited groups for our purpose because the polarization between them is strong and restrictions of choice are a salient and central element of the political conflict between both groups.

The experimental design works as follows. First, we measure participants' attitudes towards Donald Trump - whether they love or hate Donald Trump. Subjects who have a neutral stance on Trump are excluded from the analysis. Second, we inform subjects that they are matched with another study participant who will interfere in their decision making options later on and is either a Trump lover or a Trump hater. We call this person "the interventionist". Third, subjects have to make three decisions in random order: a social decision (in a dictator game), a risky decision (i.e., a choice between lotteries), and an intertemporal decision (by choosing between money now and money later). The three contexts were chosen to cover a broad range of important domains of decision making in our societies. The altruism context relates to issues of redistribution and social fairness that affect, for instance, taxation policies (e.g., Cappelen et al., 2013; Fehr and Charness, 2023). The risk context is relevant for health-related choices, environmental policies or investment choices (e.g., Allcott et al., 2020; Schneider and Sutter, 2020; Alsan et al., 2023), domains that are subject to many regulations. The intertemporal context applies to all decisions where subjects have to make tradeoffs between present and future (e.g., Laibson, 1997; Thaler and Benartzi, 2004; Dechezleprêtre et al., 2022), and they relate, for example, to educational policies or R&D policies.

In each of the three contexts, i) the choice sets are explained to the subject (e.g., the choice between the lotteries in the risk context), ii) the interventionist imposes a choice restriction (e.g., forbidding to take one of the lotteries), iii) the subject can decide whether she wants to pay 10 Dollar-cents to lift the choice restriction and regain the full choice set and iv) the subject makes the actual decision (e.g., choosing a particular lottery). The decision to lift or accept the choice restriction is our main outcome variable, and we measure it for the same type of restriction in two different treatments: one where the interventionist is an ingroup member (i.e., has the same attitude towards Trump), and one where the interventionist is an outgroup member (i.e., has the opposite attitude towards Trump). Besides our main outcome variable regarding the decision to take back control by lifting the restriction, we also dig deeper to learn about the motives for such behavior. In a survey, we elicit subjects' motives for lifting and accepting choice restrictions and their beliefs regarding the motives of the interventionist. In total, we ran this experiment with

1,298 US-citizens on Prolific, split into two experiments where the second one serves as a robustness check and as an extension.

We find that subjects lift the same choice restrictions significantly more often if a member of the political outgroup (different attitude towards Trump) imposed them than when they were imposed by an ingroup member (same attitude towards Trump). This holds for both experiments (with an 18% increase in the first and a 13% increase in the second experiment), and is highly significant. We find effects in all three contexts (social, intertemporal, and weakly significant in risk), which indicates that an aversion against outgroup-generated choice restrictions is not domain-specific. Further analyses of the survey data provide two main insights into the potential underlying mechanisms of this aversion. First, subjects whose restrictions were imposed by an outgroup member rather than an ingroup member state that they are more strongly intrinsically motivated to oppose the restrictions. Despite identical restrictions across treatments, the value of choice autonomy is considerably larger if restrictions are imposed by outgroup members. Second, we find that subjects perceive the motives of the interventionist as much more malevolent if the restriction is imposed by an outgroup member rather than an ingroup member. Subjects with an interventionist from the outgroup believe that it is more likely that the restrictions were imposed in order to harm them, less likely that the restrictions were imposed in order to help them and more likely that the interventionist made the restrictions in order to feel powerful. If we control for these three beliefs, the treatment effect on the likelihood of accepting or lifting restrictions vanishes completely suggesting that beliefs about motives of the interventionist are an important channel. The likelihood that subjects restrict others themselves is twice as high when the restricted person is an outgroup member rather than an ingroup member. Moreover, we see that subjects who were more willing to accept choice restrictions are themselves more likely to restrict others. This shows that restrictions are much more actively implemented when a group with opposite interests or views can be restrained, meaning that subjects are much more liberal towards ingroup members than outgroup members.

Our study contributes to several streams of literature. First, we contribute to a literature on the effects of common group identity on economic behavior. In our study, we show how the restrictions imposed by an ingroup vs outgroup member affect people's willingness to resist the restriction whereas previous literature mainly studied the importance of a joint identity for people's behavior towards another person. This literature shows that individual behavior is crucially affected by a common or a different group identity (Akerlof

and Kranton, 2000; Goette, Huffman, and Meier, 2006; Charness, Rigotti, and Rustichini, 2007; Chen and Li, 2009; Sutter, 2009; Ockenfels and Werner, 2014; Dimant, 2023). For example, the literature shows that people are more altruistic, more likely to reciprocate positively, more likely to forgive, more willing to coordinate and more likely to maximize overall efficiency when they interact with people with whom they share an identity. These observations indicate that the extent of social preferences differs conditional on the identity of the interaction partner (Chen and Li, 2009).[1] We contribute to this literature as we are the first to show that a joint group identity also affects people's willingness to accept choice restrictions imposed by others. Note that this observation cannot be explained by models assuming more altruism towards a person with whom one shares an identity (Chen and Li, 2009) or by models that assume different expectations conditional on the identity of the other person (Ockenfels and Werner, 2014).

Second, our study relates to the literature on the intrinsic value of decision rights, a concept in the economics and psychology literature that refers to the value of having the ability to make decisions per se, regardless of the outcome of the decision (e.g., Bartling, Fehr, and Herz, 2014; Ferreira, Hanaki, and Tarroux, 2020; Buffat, Praxmarer, and Sutter, 2023). Our study contributes to this literature by showing that the extent of the willingness to re-claim decision rights (and hence the value of the decision right) may also depend on the relationship towards those who restrict it. Our study suggests that the extent of the intrinsic value of the decision right is not only be a personal characteristic but that it is also related by the specific context, here the person taking over the decision.

Third, our study complements research on paternalism and people's willingness to intervene in others' choices by focusing on those whose choice is affected. Ambuehl, Bernheim, and Ockenfels (2021) study a setup where respondents make choices concerning the conflict between respecting others' autonomy and ensuring that they receive outcomes the potential interventionist considers good. They observe that people often intervene despite an alternative option to provide mere advice.[2] Ackfeld and Ockenfels (2021) show that potential interventionists are more likely to restrict selfish choices if the decision maker learns about

[1] Apart from preferences, beliefs have been found to be drivers of group-identity effects as mutual knowledge of a joint group identity seems to induce expectations that people want to live up to (Ockenfels and Werner, 2014).

[2] Ambuehl et al. (2023) study this paradigm with German politicians observing that they often intervene to enforce patient choices without considering the "long-run criterion" which insists that choices merit intervention only if the lure of immediacy may bias intertemporal choice.

the restriction only in case she acted selfish compared to a situation where the decision maker learns about the restriction in any case. This indicates that interventions in free choice can be perceived as offensive.[3] These observations are in line with our result that subjects are more likely to impose restrictions on outgroup members since subjects might be less reluctant to offend outgroup members than ingroup members.

Finally, our study relates to a literature on political polarization, partisan animosity, and people's willingness to accept political restrictions of civil liberties (e.g., Iyengar and Westwood, 2015; Finkel et al., 2020; Boxell, Gentzkow, and Shapiro, 2022; Alsan et al., 2023). In highly politically polarized countries such as the US, scholars have argued that democracy is under threat if groups fail to accept if the political opponent is in power and can set the restrictions (Graham and Svolik, 2020) but that restrictions to civil liberties are more accepted if they are due to current circumstances such as health-insecurity reasons (Alsan et al., 2023). We contribute to this literature by presenting causal evidence that resistance against restrictions is actually stronger if they are imposed by the outgroup, which could amplify the effect of diverging views on policy.

The remainder of the paper is organized as follows. Section 2 describes the first experiment and the corresponding results. Section 3 presents the second experiment and the corresponding results. Section 4 concludes.

2. First Experiment

2.1. Sample

We conducted the first experiment on Prolific with an initial sample size of 700 participants.[4] We ordered 350 subjects who indicated in the Prolific database that they voted for Trump in the 2020 US presidential election and 350 subjects who indicated that they voted for Biden. The data collection took place in the fall of 2022, so it is natural to expect that attitudes towards Trump might have shifted for some subjects in between. As pre-registered we exclude subjects who failed the attention check and reported to have a neutral stance on Trump from the following analyses, which leaves us with 604 subjects. Of these 604 subjects, 339 indicated to hate Trump and 265 indicated to love Trump.

[3] In a similar vein, Doerrenberg et al. (2023) observe that groups are less likely to intervene than individuals and show that deciding in a social context is the likely explanation for this observation.

[4] Our experiment was pre-registered on AsPredicted: https://aspredicted.org/NS9_2X2 (#99993) and https://aspredicted.org/XQ5_L81 (#104031, update to #99993).

2.2. Experimental Design

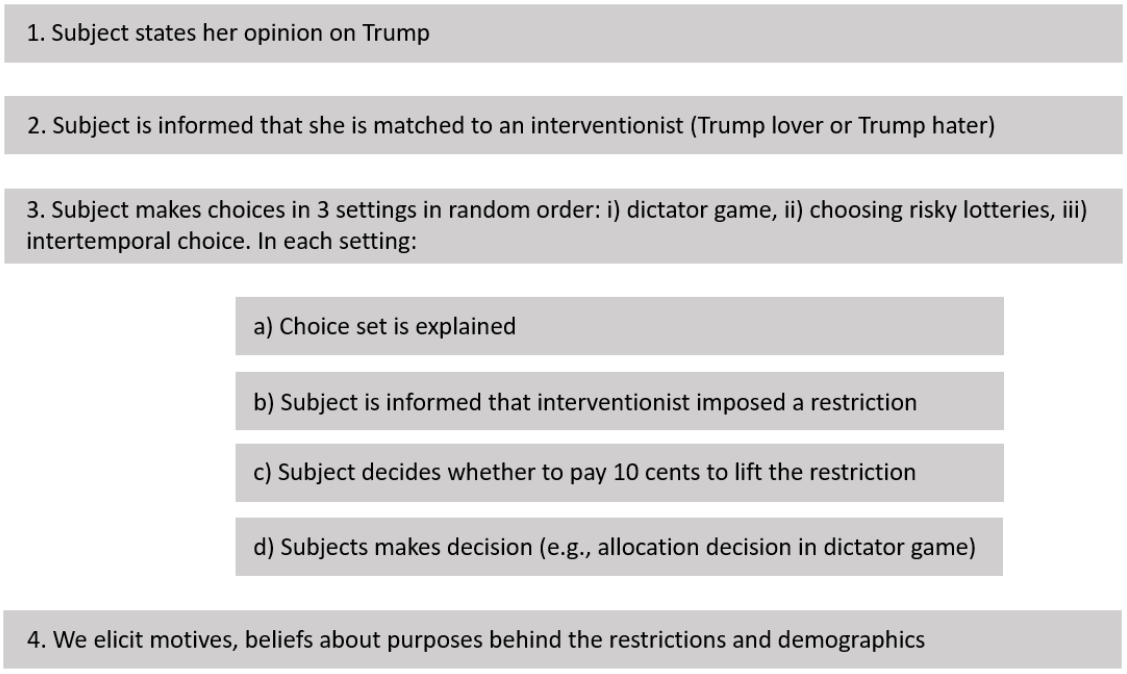
In the following, we explain the design in chronological order. Figure 1 provides an overview of the design. First, we elicit opinions on Donald Trump on a 5-point scale (Extreme Love, Moderate Love, Indifference, Moderate Hate and Extreme Hate). Then, the subject is informed that another subject will intervene in her decision making in the course of the experiment. We vary between subjects whether the intervening subject (henceforth "the interventionist") is a Trump lover or a Trump hater. This creates two treatments: an ingroup treatment where the subject and the interventionist have the same attitude towards Trump, and an outgroup treatment where the subject and the interventionist have opposing views on Trump (one loves him, the other hates him). After receiving the information about the interventionist, the subject is informed that she has to make decisions in three contexts in the experiment. She gets a starting bonus of \$0.10 and she is informed that the monetary outcomes in one of the three contexts is actually paid out.

The three contexts that appear in random order are i) a dictator game (the 'altruism context'), ii) a choice between different lotteries (the 'risk context') and iii) a choice between payoffs at two different points in time (the 'time context'). In each context, the choice set is explained, the subject is informed that the interventionist has restricted the choice set and the subject is asked whether she wants to pay \$0.10 to get rid of the choice restriction.[5] Whether or not the subject lifts the restriction is the main outcome variable of this study. The interventionist imposes the same restrictions in both treatments.[6]

[5] Appendix A.1 provides an example how the subject is informed about the restriction in the experiment.

[6] Some subjects also function as interventionist as described in the following: In the end of the experiment we ask all subjects whether they want to impose the restrictions they faced on other subjects. The subjects who answer "Yes" are assigned as interventionists to other subjects. This procedure enables us to hold the content of restrictions constant across interventionist types (Trump lover vs Trump hater) while also avoiding deception.

Figure 1: Experimental Design



The choice sets and restrictions are of the following nature, as summarized in Table 1. In the dictator game, the subject has to split \$1 between herself and another random subject (not the interventionist). We implemented two restrictions that vary between subjects. In the pro-social restriction, the interventionist forbids the subject to share less than \$0.60. In the anti-social restriction, the interventionist forbids the subject to share anything.

In the risk context, the unrestricted choice set contains three options: In option A, the subject gets \$1 with 50% probability and 0\$ with 50% probability. In option B, the subject gets \$0.75 with 50% probability and 0.25\$ with 50% probability. In option C, the subject gets \$0.5 with 100 % probability. The interventionist forbids the subject to take options A and C.

In the time context, the unrestricted choice set contains two options: In option A, the subject gets \$0.30 right after the study. In option B, the subject gets \$1 one month later. The interventionist forbids the subject to take option B.

Table 1: Choice Sets and Restrictions for Each Contexts

	Altruism	**Risk**	**Time**
Choice Set	Splitting \$1	A: 50% for \$1; 50% for \$0 B: 50% for \$0.75; 50% for \$0.25 C: \$0.50 for sure	A: \$0.30 right after study B: \$1 one month later
Restriction	Giving <\$0.60 forbidden or Giving >\$0 forbidden	Options A and C are forbidden	Option B is forbidden

After the subject has made her decisions in the three contexts, we elicit motives for lifting or accepting each of the three restrictions the subject faced. We elicit four different motives on a 4-point scale (Very relevant, relevant, somewhat relevant and not relevant): 1) instrumental motives, 2) general autonomy motives, 3) intrinsic motives to be dependent or independent from the specific interventionist, and 4) intrinsic motives whether the interventionist has power.[7]

Furthermore, we elicit whether the subject was surprised that the interventionist imposed the restrictions (Yes/No) and how reasonable the subject found the restrictions from 1 (very unreasonable) to 10 (very reasonable). We also elicit subjects' beliefs about three potential motives of the interventionist to implement the restrictions. We elicit beliefs whether the interventionist made the restrictions i) to harm the subject, ii) to protect the subject (and in case of the dictator game also the recipient) from bad decisions, and iii) to feel powerful on a 4-point scale (Strongly agree, somewhat agree, somewhat disagree and strongly disagree).[8]

[7]The wording if the subject lifted a restriction is: (1) "Lifting the restriction allowed me to choose a split of money that I liked better" (version for the altruism context; description of choice varies across contexts). (2) "I felt a general dislike that my freedom of choice was restricted in this setting.". (3) "I felt an even stronger dislike that a {Trump hater/Trump lover} restricted my freedom of choice". (4) "I felt a general dislike that the {Trump hater/Trump lover} had control in this setting". The wording if the subject accepted a restriction is: (1) "I was still able to choose the split I liked best/ It wasn't that important for me to get another split." (version for the altruism context; description of choice varies across contexts). (2) "I liked it that somebody else made (part of) the decision for me". (3) "I liked it even better that a {Trump hater/Trump lover} made (part of) the decision for me". (4) "I liked it that a {Trump hater/Trump lover} had control in this setting".

[8]The wording is: i) "The Trump lover/Trump hater made the restrictions to harm me". ii) "The Trump lover/Trump hater made the restrictions to protect me and others against bad decisions" (In the altruism context we added the "and others"). iii) "The Trump lover/Trump hater made the restrictions because he/she likes to feel powerful".

Finally, we asked the subject whether she wants to impose the restrictions she faced on i) future participants without mentioning their political opinions, ii) future participants who love Trump and iii) future participants who hate Trump. We inform the subject that we might actually impose the restrictions she faced on other participants, should the subject answer with "Yes" to the respective question.

2.3. Results

I. Descriptives: Taking Back Control

Table 2 shows how often subjects take back control across contexts. In total, subjects take back control in 57% of their decisions. In the altruism context 63% of subjects take back control. In the risk context, 48% of the subjects take back control and in the time context, 60% of the subjects take back control. Subjects who faced the prosocial restriction in the altruism context take back control in 75% of their decisions and subjects who faced the antisocial restriction in the altruism context take back control in 51% of their decisions. The diverging rates of subjects who take back control in the prosocial and antisocial restriction (difference with $p<0.001$, see table A.7) demonstrate that the content of the restriction matters. Moreover, the fact that subjects take back control more often if the restriction requires that subjects share resources (prosocial restriction) rather than keep resources (antisocial restriction) demonstrates self-servingness.

Table 2: Share of subjects who take back control in the different contexts

	Altruism	Risk	Time	Total	Prosocial	Antisocial
mean	0.631	0.482	0.601	0.571	0.745	0.513
count	604	604	604	604	306	298

Notes. The columns "Prosocial" and "Antisocial" report the share of subjects who take back control in the prosocial and the antisocial restriction that are both part of the "Altruism" context.

II. Effect of the Political Identity of the Interventionist

Table 3 presents the treatment effects on the rate in which subjects take back control. Subjects take back control 18% more often (which is equivalent to an increase of 9.21 percentage points) if the interventionist is an outgroup member rather than an ingroup

member (p=0.001; column 1). Subjects who hate Trump take back control 10% more often if the interventionist is an outgroup member (p=0.152, column 2) and subjects who love Trump take back control 29% more often if the interventionist is an outgroup member (p=0.001, column 3).[9] Adding control variables (age, gender, race and education) does not change the main results (see Appendix, table A.2).

Table 3: Effects of group affiliation of interventionist on taking control behavior

	Dependent variable: Share of taking control		
	(1)	(2)	(3)
	Full sample	Trump hating subjects	Trump loving subjects
Outgroup Interventionist	0.0921***	0.0521	0.141***
	(0.001)	(0.152)	(0.001)
Constant	0.523***	0.550***	0.494***
	(0.000)	(0.000)	(0.000)
Observations	604	339	265
R^2	0.019	0.006	0.044

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The dependent variable denotes the share of decisions in which the subject paid 10 cents to lift the choice restriction. The dummy "Outgroup Interventionist" takes the value of 1 if the interventionist is an outgroup member, i.e. if the subject and the interventionist have different attitudes towards Donald Trump (love vs hate).

III. Effects across Choice Contexts

Table 4 presents treatment effects for each of the three choice contexts separately. While all effects point in the same direction, they are particularly pronounced and significant in the altruism and the time context and less pronounced and not significant in the risk

[9] The interaction term of treatment status and political affiliation of the subject has a p-value of 0.103 (see Appendix, table A.3).

context.

Table 4: Effects across contexts

	Dependent variable: Taking control in respective context				
	(1)	(2)	(3)	(4)	(5)
	Altruism	Risk	Time	Prosocial	Antisocial
Outgroup Interventionist	0.150^{***}	0.0146	0.112^{***}	0.127^{**}	0.194^{***}
	(0.000)	(0.720)	(0.005)	(0.010)	(0.001)
Constant	0.553^{***}	0.474^{***}	0.543^{***}	0.682^{***}	0.409^{***}
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	604	604	604	306	298
R^2	0.024	0.000	0.013	0.021	0.037

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The columns "Prosocial" and "Antisocial" report the share of subjects who take back control in the prosocial and the antisocial restriction that are both part of the "Altruism" context.

We speculate that a reason that we do not observe an effect in the risk context is that it leaves less room to assume malevolent motives on the side of the interventionist. The lotteries in the risk context have all the same expected value and the interventionist forbids to take the most risky and the least risky lottery which might leave less leeway to interpret the restriction as an hostile act compared to the altruism and time context. This interpretation is in line with the evidence on the importance of beliefs about the motives of the interventionist for behavior discussed in subsection V. Moreover, the second experiment will shed more light on related mechanisms.

IV. Motives

As described in section 2.2, we elicit 4 different motives on a scale from 1 to 4 (Very relevant, relevant, somewhat relevant and not relevant) for each decision to lift or accept the choice restriction in the three contexts: instrumental motives (motive 1), general intrinsic autonomy motives (motive 2), intrinsic motives to be dependent or independent from the specific interventionist (motive 3) and intrinsic motives regarding preferences that the interventionist had control over the situation (motive 4). The directions of the motives we

elicit differ depending on whether the subject accepted or lifted the respective restriction. For instance, if the subject lifted the restriction we asked how strongly the subject disliked that her freedom of choice was restricted to measure general intrinsic motives. If the subject accepted the restriction we asked how strongly the subject liked it that somebody else made (part of) the decision for her.

With regards of the overall strength of the motives, subjects report that they are most strongly driven by instrumental motives which holds in all three contexts for both i) the group of subjects who lifted the respective restrictions and ii) the group of subjects who accepted the respective restriction in all three contexts. The average strength of the instrumental motive over all contexts is 3.4 on a scale from 1 to 4 (see section Appendix A.5). The average strength of the three intrinsic motives is weaker (2.2 for motive 2, 1.8 for motive 3, and 1.8 for motive 4).

Turning to the questions how motives shift depending on the group affiliation of the interventionist, we look separately at the groups of subjects who accepted restrictions and the group of subjects who lifted restrictions. This makes sense analytically because the directions of the motives run in opposite directions. For instance, we asked a person who accepted a restriction whether she liked it even better that a {Trump lover; Trump hater} made the decision for her, whereas we asked a person who lifted a restriction whether she felt an even stronger dislike that a {Trump lover; Trump hater} made the decision for her.

Subjects who lifted restrictions report in all three contexts significantly stronger motives 3 and 4 (all p-values below 0.001) if the interventionist is an outgroup member rather than an ingroup member, meaning that they felt an even stronger dislike that an outgroup member rather than an ingroup member restricted her freedom of choice (motive 3) and had control in this setting (motive 4).

Subjects who accepted restrictions report in all three contexts significantly weaker motives 3 and 4 (all p-values below 0.02) if the interventionist is an outgroup member rather than an ingroup member, meaning that they liked it even better that an ingroup member rather than an outgroup member made (part of) the decision for them (motive 3) and had control in this setting.

V. Beliefs about Motives of Interventionist and Their Impact on Taking Back Control

We elicited beliefs about three potential motives of the interventionist behind her decision to impose the restrictions: the belief that the interventionist imposed the restrictions to harm the subject ("IntHarmsMe"), to protect the subject ("IntProtectsMe") and because

she likes to feel powerful ("IntWantsPower"). These beliefs are measured on a scale with values 1 (Strongly disagree), 2 (Somewhat disagree), 3 (Somewhat agree) and 4 (Strongly agree).

Overall, subjects are skeptical of the benevolent nature of interventionists. They believe that the interventionist wants power with an average response of 3.04 which is significantly larger than the expected 2.50 in case of random responses ($p<0.001$, two-sided t-test). Subjects disagree with the statement that the interventionist wants to protect them with an average response of 1.69 which is significantly lower than the expected 2.50 in case of random responses ($p<0.001$, two-sided t-test). Only with respect to the interventionist harming them, subjects respond on average neutrally with 2.53, which is close to the expected 2.50 in case of random responses ($p=0.41$, two-sided t-test).

We further observe that these beliefs strongly depend on the treatment, as we show in Table 5. Subjects believe that outgroup interventionists have more malevolent intentions than ingroup interventionists. This holds true for all motives. Subjects believe that the same restrictions are more likely intended to harm them and to make the interventionist feel powerful if the interventionist is an outgroup member. Subjects also believe that the same restrictions are less likely intended to protect them if the interventionist is an outgroup member (all p-values <0.001).

We asked subjects whether or not they found it surprising that the interventionist imposed the restrictions on them. Of the subjects who had an outgroup interventionist, 17.3% of subjects are surprised and of the subjects who had an ingroup interventionist, 52.6% are surprised (the difference is significant with $p<0.001$, see table A.20). Subjects don't seem to perceive the restrictions as particularly benevolent. Many subjects lift them and subjects think that even ingroup interventionists who have imposed them are more interested in power (2.62) than in protecting subjects (2.00, $p<0.001$, two-sided t-test). Therefore, it might surprise subjects that fellow ingroup members impose such restrictions on them, while it might be less surprising that outgroup members do so. Subjects also find restrictions more reasonable if an ingroup member has imposed them (increase=0.68 on a scale from 1 to 10, $p=0.001$, see table A.20).

Table 5: Effects on beliefs about motives of interventionist

	(1) IntHarmsMe	(2) IntProtectsMe	(3) IntWantsPower
Outgroup Interventionist	0.827***	-0.591***	0.809***
	(0.000)	(0.000)	(0.000)
Constant	2.103***	1.997***	2.622***
	(0.000)	(0.000)	(0.000)
Observations	604	604	604
R^2	0.194	0.133	0.182

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In a next step, we show that the beliefs regarding the intentions of the interventionist have predictive power for a subject's choice to take back control, as shown in column 1 of Table 6. In column 2 of that table we reproduce the first column of Table 3, so that we can see in column 3 of Table 6 what happens to the dummy "Outgroup interventionist" once we also control for a subject's motives. In fact, that last column shows that the effect of the treatment dummy on the main outcome variable vanishes completely if we control for beliefs about motives of the interventionist, suggesting that the effect is driven by beliefs about the (bad) intentions of an interventionist from an outgroup.

Table 6: Predictive Power of Beliefs about Motives

	Dependent variable: Share of taking control		
	(1)	(2)	(3)
IntHarmsMe	0.0206		0.0215
	(0.237)		(0.227)
IntProtectsMe	-0.0735***		-0.0744***
	(0.000)		(0.000)
IntWantsPower	0.0449**		0.0456**
	(0.013)		(0.014)
Outgroup Interventionist		0.0921***	-0.00652
		(0.001)	(0.833)
Constant	0.507***	0.523***	0.507***
	(0.000)	(0.000)	(0.000)
Observations	604	604	604
R^2	0.083	0.019	0.083

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

VI. Interventionist Behavior

We ask subjects whether they want to impose the restrictions they faced on i) future participants with unclear political affiliation, ii) future participants who love Trump and iii) future participants who hate Trump. We inform the subjects that we might actually impose the restrictions they faced on other participants, should the subjects answer with "Yes" to the respective question. The dummy variable "ImposeRestrictions" takes the value of 1 if the subject imposes the restrictions on other subjects whose political affiliation is unclear. The dummy variable "ImposeResOnIngroup" takes the value of 1 if the subject imposes the restrictions on ingroup members and 0 otherwise. The dummy vari-

able "ImposeResOnOutgroup" takes the value of 1 if the subject imposes the restrictions on outgroup members.

16.2% of the subjects impose the restrictions on ingroup members, 22.4% impose the restrictions on others whose political affiliation is unclear and 32.1% of subjects impose restrictions on outgroup members. These three means are mutually significantly different at the 1% level. Thus, subjects impose restrictions 98% more often on outgroup members than on ingroup members. On an individual level, we also see that there is a link between a subject's likelihood to take back control from an interventionist and the likelihood with which a subject herself imposes restrictions on others. Subjects who do not impose the restriction on others with unclear political affiliation are 17.0 percentage points more likely to lift restrictions themselves ($p<0.001$, see table A.22).

3. Second Experiment

In the first experiment, we observed that subjects took back control significantly more often if the interventionist was an outgroup member rather than an ingroup member in the altruism and time context. In the risk context, the effect had the same direction, but was not significant. A potential reason why we did not observe a significant effect in the risk context is that all the available lottery options had the same expected value, leaving less leeway to perceive restrictions imposed by outgroup members as particularly malevolent. Moreover, in the first experiment the restriction in the risk context forbade to take the lottery with the highest risk and the lottery with the lowest risk which further limits the leeway to assume malevolent motives behind the restriction.

The second experiment served several purposes. First, it was intended as a robustness check of our findings from the first experiment. Second, by varying the risk context, we wanted to examine whether different lotteries (with different expected values) would yield similar findings as in the altruism and time context. Third, by asking about the beliefs about the interventionist's motives for each context separately (rather than for all three contexts together, as in the first experiment), we wanted to find out whether beliefs about motives of the interventionist differ across choice contexts.

3.1. Sample and Experimental Design

We use a similar design as in the first experiment except that we make two modifications.[10] The first modification concerns the parameters of the risk context. In the second experiment, the unrestricted choice set contains two lotteries. In lottery A, the subject gets \$1 with 50% probability and 0\$ with 50% probability. In lottery B, the subject gets \$0.8 with 100% probability. The interventionist forbids the subject to take lottery B which has a higher expected value than lottery A.

The second modification concerns the elicitation of the beliefs about the motives of the interventionist to impose the restriction. In the second experiment, we elicit the beliefs about the motives to impose the restrictions for each context rather than as an aggregate as in the first experiment.

We conducted the second experiment on Prolific and ordered a sample size of 800 subjects. 694 subjects passed the attention check and reported either hate or love for Donald Trump and thus remain for the analysis.

3.2. Results

I. Taking Back Control

In total, subjects take back control in 67% of their decisions (see table 7). Overall, the shares of subjects who take back control replicate the findings of the first experiment well for the altruism and time context. 61% of subjects take back control in the altruism context (compared to 63% in the first experiment). 57% of subjects take back control in the time context (compared to 60% in the first experiment). Subjects who faced the prosocial restriction in the altruism context take back control in 75% of their decisions (compared to 75% in the first experiment). Subjects who faced the antisocial restriction in the altruism context take back control in 48% of their decisions (compared to 51% in the first experiment).

Subjects take back control much more often in the risk context (83% compared to 48% in the first experiment) which demonstrates that the restriction in the new parameterization is clearly seen as a more unpleasant obstacle than the restriction in the first experiment.

[10] Our second experiment was pre-registered on AsPredicted: https://aspredicted.org/LJX_F4K (#118924).

Table 7: Share of subjects who take control in the different contexts

	Altruism	Risk	Time	Total	Prosocial	Antisocial
mean	0.612	0.829	0.573	0.671	0.753	0.483
count	694	694	694	694	332	362

Notes. The columns "Prosocial" and "Antisocial" report the share of subjects who take back control in the prosocial and the antisocial restriction that are both part of the "Altruism" context.

II. Main Effects

Table 8 shows that the second experiment fairly precisely replicates the overall effect of the political affiliation of the interventionist on the likelihood that subjects take back control. Overall, we find here that subjects take back control 13% more often if the interventionist is an outgroup instead of an ingroup member. The effect is significant both for Trump-hating and for Trump-loving subjects.

Table 8: Effects of group affiliation of interventionist on taking control behavior

	Dependent variable: Share of taking control		
	(1)	(2)	(3)
	Full sample	Trump hating subjects	Trump loving subjects
Outgroup Interventionist	0.0790***	0.0595**	0.102***
	(0.000)	(0.035)	(0.004)
Constant	0.633***	0.665***	0.592***
	(0.000)	(0.000)	(0.000)
Observations	694	393	301
R^2	0.018	0.011	0.028

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The dependent variable denotes the share of decisions in which the subject paid 10 cents to get rid of the choice restriction. The dummy "Outgroup Interventionist" takes the value of 1 if the interventionist is an outgroup member, i.e. if the subject and the interventionist have different attitudes towards Donald Trump (love vs hate).

III. Effects across Contexts

Table 9 shows that the effect in the risk context is significant at the 10% level in the second experiment with its new parameterization (p=0.060, see column 2). When an outgroup interventionist forbids the choice of the safe option (which has a higher expected value than the remaining lottery), then subjects take back control about 7% more often. In the other domains, we can confirm the findings from the first experiment. The treatment effects in the altruism and time context are similar to the findings in the first experiment. Regarding the two restrictions in the altruism context (prosocial and antisocial restriction), we observe that effect sizes are more pronounced in the antisocial restriction, again confirming the pattern found in the first experiment.

Table 9: Effects across contexts

	Dependent variable: Taking control in respective context				
	(1)	(2)	(3)	(4)	(5)
	Altruism	Risk	Time	Prosocial	Antisocial
Outgroup Interventionist	0.103***	0.0536*	0.0808**	0.0420	0.131**
	(0.005)	(0.060)	(0.031)	(0.378)	(0.013)
Constant	0.562***	0.802***	0.534***	0.731***	0.423***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	694	694	694	332	362
R^2	0.011	0.005	0.007	0.002	0.017

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. Column 4 and 5 capture the prosocial and antisocial restriction that are both part of the "altruism" context.

IV. Beliefs about Motives of Interventionist

Table 10 reports the overall believed benevolence behind the restrictions in the three contexts. For each context, we elicited how strongly subjects believe that the interventionist imposed the restriction i) to protect the subject (and in the case of the altruism context also others), ii) to harm the subject, and iii) because he/she likes to feel powerful on a scale from 1 (strongly disagree) to 4 (strongly agree). In order to generate a measure for overall believed benevolence, we summed up all three beliefs where beliefs that the interventionist wants to protect enter positively, whereas beliefs that the interventionist wants to harm or wants power enter negatively. Then, we normalized this aggregate measure such that it ranges from 0 (least benevolent) to 1 (most benevolent) which allows us to assess and compare the overall believed benevolence for each context. By construction, average values of 2.5 for all three motives would result in a benevolence index of 0.5.

Subjects believe that the motives behind the restrictions in the altruism context are most benevolent compared to the other two contexts and that the motives behind the restrictions in the risk context are least benevolent. The differences between the means of the three contexts reported in table 10 are mutually significantly different with p-values below 0.001 (two-tailed t-tests). Looking at the two restrictions within the altruism context,

subjects think that the motives behind the antisocial restriction (it was forbidden to share anything) are more benevolent than the motives behind the prosocial restriction (it was forbidden to share less than 60 cents) ($p<0.001$, two-tailed t-test). Note however, that all entries in Table 10 are closer to the malevolent end of the spectrum (value of 0) than to the benevolent end (value of 1) and are significantly smaller than the neutrality value of 0.5 (all p-values <0.001, two-tailed t-tests). Table B.33 in the Appendix reports all three beliefs in isolation for each context. In all contexts, subjects think that interventionists are more likely to impose the restrictions to harm the subject and feel powerful rather than to protect the subject, which is in line with the findings of the first experiment.

The perceived benevolence in the altruism context decreased by 0.25 index points in the altruism context, by 0.21 index points in the risk context and by 0.22 index points in the time context (all p-values <0.001, see table B.35 in the Appendix). Thus, treatment effects on perceived benevolence are in a similar range across contexts. Therefore, the leeway to assume more or less malevolent motives of the interventionist depending on her party affiliation seems to be in a similar range in all three contexts of the second experiment.

Table 10: Overall perceived benevolence behind the restrictions across contexts

	Altruism	Risk	Time	Prosocial	Antisocial
mean	0.358	0.279	0.323	0.302	0.410
count	694	694	694	332	362

Notes. Benevolence is coded as a normalized index ranging from 0 (least benevolent) to 1 (most benevolent). The columns "Prosocial" and "Antisocial" report perceived benevolence of the prosocial and the antisocial restriction that are both part of the "Altruism" context.

V. Further Results

As in the first experiment, subjects express strong intrinsic motives to be independent. They report significantly stronger motives to be independent from outgroup interventionists rather than from ingroup interventionists and they report a significantly stronger preference to prevent that outgroup interventionists have control (see Appendix B.1 for detailed tables and statistics).

Subject are 135% more likely to impose a restriction on an outgroup member rather

than an ingroup member when given the chance to become an interventionist themselves (compared to an 98% increase in experiment 1). Moreover, as in the first experiment, taking back control correlates negatively and significantly with imposing restrictions on others (see Appendix B.3 for further information).

4. Conclusion

In this study, we presented evidence that subjects resist more against the same choice restrictions if these were imposed on them by a member of the political outgroup rather than by an ingroup member. Further analyses provide insights into two potential mechanisms. First, subjects report stronger intrinsic motives to be independent from outgroup control. Second, subjects believe that the motives behind the restrictions are more malevolent if the interventionist is an outgroup member.

Our findings might help to explain real-world conflicts where people resists outgroup control (e.g., when it comes to mandatory savings plans, climate protection, redistribution, abortion, or gun control). If resistance against outgroup control comes indeed at least partly from the fact that restrictions were proposed by the political outgroup and not by the ingroup, then this indicates that the possibility to persuade the other side with factual arguments is limited.[11] In this respect, our results highlight the importance to create shared overarching identities to prevent high levels of polarization in order to maintain acceptance of shared rules within a society. Building shared identities might for example mitigate resistance against new rules and regulations that are necessary for the implementation of large societal transformations such as the transformation towards a green economy.[12] Increasing acceptance of rules and regulations might also be one (desired) consequence of nation-building policies that are implemented in many countries to foster a sense of shared national identity (e.g., Bazzi et al., 2019; Depetris-Chauvin, Durante, and Campante, 2020; Bagues and Roth, 2023). Moreover, shared identities that transcend the national level (such as a European identity or even a global identity) might foster acceptance for rules and regulations that aim at solving problems that transcend the national level and that are unlikely to be solved without binding agreements between nations, such as climate

[11] Kubin et al. (2021) makes the case that communicating facts is not an effective strategy to bridge political divides.

[12] The yellow vests movement in France is an example of a group that might perceive green policies imposed on them by the national government as outgroup control.

change.

Future research could address the external validity of this observations. While we deliberately chose very abstract decision situations and constraints in our study, a promising step for further research would be to analyze resistance against more realistic choice restrictions.

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Appendix

Contents

Appendix A. First Experiment

Appendix A.1. Exemplary Treatment Screen

The screenshot below captures the part of the survey where the interventionist (in this case a Trump hater) imposes the pro-social restriction on the subject in the Dictator Game. The subject can accept the restriction or pay 10 cents to lift the restriction and take back full control.

What do you want to do? No other participant will observe your actions.

- ○ **Accept the choice restriction** that the Trump Hater imposed on you
- ○ Pay 10 cents to **take back full control** (split the money as you see fit)

Appendix A.2. Behavior in Economic Games

Table A.1: Effect on giving in dictator game

	(1)
	Dictator Game Giving
Outgroup Interventionist	3.668*
	(0.064)
Antisocial Restriction	-16.54***
	(0.000)
Constant	33.40***
	(0.000)
Observations	604
R^2	0.107

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

One subject wrote the comment: "*I wanted them to have a higher share because I presume I am a "trump lover" and I want people to know either side can be good.*"

Some subjects decide to lift the choice restriction but don't choose an option that was previously forbidden:

- 19/604 in the altruism context
- 42/604 in the risk context
- 36/604 in the time context

Appendix A.3. Additional Results: Main Effect

Table A.2: Adding controls to the main regressions

	Full sample		Trump hating subjects		Trump loving subjects	
	(1)	(2)	(3)	(4)	(5)	(6)
	ShareTakeControl	ShareTakeControl	ShareTakeControl	ShareTakeControl	ShareTakeControl	ShareTakeControl
OutgroupInt	0.0921***	0.0996***	0.0521	0.0632*	0.141***	0.136***
	(0.001)	(0.000)	(0.152)	(0.086)	(0.001)	(0.001)
_cons	0.523***	0.381***	0.550***	0.400***	0.494***	0.367***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)
Controls	No	Yes	No	Yes	No	Yes
N	604	604	339	339	265	265
R^2	0.019	0.071	0.006	0.086	0.044	0.091

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. Controls include age, gender, race and education

Table A.3: Interaction of subjects' political affiliation and treatment

	(1)	(2)
	Share Take Control	Share Take Control
Outgroup Interventionist=1	0.141***	0.143***
	(0.001)	(0.000)
Trump Hater=1	0.0564	0.0704*
	(0.160)	(0.083)
Outgroup Interventionist=1 × Trump Hater=1	-0.0889	-0.0813
	(0.103)	(0.141)
Constant	0.494***	0.333***
	(0.000)	(0.000)
Controls	No	Yes
Observations	604	604
R^2	0.024	0.077

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. Controls include age, gender, race and education. "Trump Hater" is a dummy that equals 1 if the subject hates Trump.

Table A.4: Interaction of treatment and strong identifier dummy

	Dependent variable: Share of taking control		
	(1)	(2)	(3)
	Full sample	Trump hating subjects	Trump loving subjects
Outgroup Interventionist=1	0.107***	0.0736	0.121**
	(0.007)	(0.265)	(0.014)
Strong Identifier=1	0.0216	0.00701	-0.0159
	(0.591)	(0.906)	(0.814)
Outgroup Interventionist=1 × Strong Identifier=1	-0.0286	-0.0306	0.0630
	(0.599)	(0.698)	(0.477)
Constant	0.513***	0.545***	0.498***
	(0.000)	(0.000)	(0.000)
Observations	604	339	265
R^2	0.020	0.007	0.046

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The dummy variable "Strong Identifier" takes the value 1 if the subject reported to feel extreme hate or extreme love towards Donald Trump and 0 otherwise.

Appendix A.4. Additional Results: Effects across Contexts

Table A.5: Correlations between behavior in different contexts

	(1)		
	TakeControlAltruism	TakeControlRisk	TakeControlTime
TakeControlAltruism	1		
TakeControlRisk	0.202***	1	
TakeControlTime	0.168***	0.211***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.6: Group differences on taking control in both dictator game restrictions

	Dependent variable: Taking control in Dictator Game	
	(1)	(2)
	Prosocial Restriction	Antisocial Restriction
Trump Hater	-0.0353	0.0582
	(0.482)	(0.320)
Constant	0.765***	0.481***
	(0.000)	(0.000)
Observations	306	298
R^2	0.002	0.003

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. Columns: (1) Pro social restriction (Forced to share at least 60 cents); (2) Anti social restriction (Forced to share nothing). "Trump Hater" is a dummy variable and takes the value of 1 if the subject hates Trump.

Table A.7: Comparing prosocial and antisocial restriction in the Dictator Game (i.e., altruism context)

	(1)
	Taking Control in Dictator Game
Prosocial Restriction	0.232***
	(0.000)
Constant	0.513***
	(0.000)
Observations	604
R^2	0.058

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. "Prosocial Restriction" takes the value of 1 if the subject faces the prosocial restriction and 0 if the subject faces the antisocial restriction.

Table A.8: Interaction of treatment and restriction in the dictator game

	(1)
	Taking Control in Dictator Game
Outgroup Interventionist=1	0.194***
	(0.001)
Prosocial Restriction=1	0.273***
	(0.000)
Outgroup Interventionist=1 × Prosocial Restriction=1	-0.0663
	(0.381)
Constant	0.409***
	(0.000)
Observations	604
R^2	0.086

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. "Prosocial Restriction" takes the value of 1 if the subject faces the prosocial restriction and 0 if the subject faces the antisocial restriction.

Table A.9: Interaction of treatment and group affiliation in the dictator game

	Dependent variable: Taking control in Dictator Game	
	(1)	(2)
	Prosocial Restriction	Antisocial Restriction
Outgroup Interventionist=1	0.166**	0.205**
	(0.020)	(0.017)
Trump Hater=1	-0.0224	0.0634
	(0.767)	(0.454)
Outgroup Interventionist=1 × Trump Hater=1	-0.0583	-0.0235
	(0.554)	(0.839)
Constant	0.693***	0.375***
	(0.000)	(0.000)
Observations	306	298
R^2	0.026	0.040

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. Columns: (1) Forced to share at least 60 cents; (2) Forced to share nothing. "Trump Hater" is a dummy variable and takes the value of 1 if the subject hates Trump.

Appendix A.5. Additional Results: Motives

We measured the following motives:

- Instrumental Motives: Motive 1
- General Autonomy Motives: Motive 2
- Motives to be independent from interventionist: Motive 3
- Motives concerning interventionist having control: Motive 4

Table A.10: Motives for lifting/accepting choice restrictions pooled

	Motive1	Motive2	Motive3	Motive4
mean	3.368159	2.17936	1.711761	1.810155
N	604			

Notes. Note that this table includes motives for lifting AND accepting. Thus, the "direction" of the motives is not the same. Hence, the values are a measure of the overall importance of the respective motive, but not of the direction of it. For instance, a high value of instrumental motives does not imply whether subjects always have strong instrumental motives for lifting or accepting the restriction.

Table A.11: Motives for **lifting** restrictions

	MotiveLiftingAltruism1	MotiveLiftingAltruism2	MotiveLiftingAltruism3	MotiveLiftingAltruism4
mean	3.595801	2.958005	2.223097	2.341207
N	381			

	MotiveLiftingRisk1	MotiveLiftingRisk2	MotiveLiftingRisk3	MotiveLiftingRisk4
mean	3.52921	2.852234	2.14433	2.268041
N	291			

	MotiveLiftingTime1	MotiveLiftingTime2	MotiveLiftingTime3	MotiveLiftingTime4
mean	3.70442	2.614325	1.969697	2.082645
N	363			

Table A.12: Motives for **accepting** restrictions

	MotiveAcceptingAltruism1	MotiveAcceptingAltruism2	MotiveAcceptingAltruism3	MotiveAcceptingAltruism4
mean	2.982063	1.475336	2.197943	1.363229
N	446			

	MotiveAcceptingRisk1	MotiveAcceptingRisk2	MotiveAcceptingRisk3	MotiveAcceptingRisk4
mean	3.070288	1.271565	1.207668	1.172524
N	313			

	MotiveAcceptingTime1	MotiveAcceptingTime2	MotiveAcceptingTime3	MotiveAcceptingTime4
mean	3.058091	1.311203	1.294606	1.248963
N	241			

Table A.13: Treatment effects in the altruism context on motives for subjects who lifted the restriction

	(1) MotiveLiftingAltruism1	(2) MotiveLiftingAltruism2	(3) MotiveLiftingAltruism3	(4) MotiveLiftingAltruism4
Outgroup Interventionist	-0.0761	0.207*	0.806***	0.655***
	(0.329)	(0.063)	(0.000)	(0.000)
Constant	3.640***	2.839***	1.758***	1.963***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	381	381	381	381
R^2	0.002	0.009	0.108	0.073

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.14: Treatment effects in the risk context on motives for subjects who lifted the restriction

	(1) MotiveLiftingRisk1	(2) MotiveLiftingRisk2	(3) MotiveLiftingRisk3	(4) MotiveLiftingRisk4
Outgroup Interventionist	-0.0961	0.532***	1.005***	0.854***
	(0.325)	(0.000)	(0.000)	(0.000)
Constant	3.580***	2.572***	1.616***	1.819***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	291	291	291	291
R^2	0.003	0.055	0.167	0.128

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.15: Treatment effects in the time context on motives for subjects who lifted the restriction

	(1) MotiveLiftingTime1	(2) MotiveLiftingTime2	(3) MotiveLiftingTime3	(4) MotiveLiftingTime4
Outgroup Interventionist	-0.00788	0.124	0.731***	0.460***
	(0.911)	(0.309)	(0.000)	(0.000)
Constant	3.709***	2.544***	1.557***	1.823***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	362	363	363	363
R^2	0.000	0.003	0.098	0.041

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.16: Treatment effects in the altruism context on motives for subjects who accepted the restriction

	(1) MotiveAcceptingAltruism1	(2) MotiveAcceptingAltruism2	(3) MotiveAcceptingAltruism3	(4) MotiveAcceptingAltruism4
Outgroup Interventionist	0.0492	-0.207*	0.615***	-0.310***
	(0.735)	(0.073)	(0.000)	(0.002)
Constant	2.962***	1.562***	1.819***	1.492***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	223	223	389	223
R^2	0.001	0.013	0.061	0.039

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.17: Treatment effects in the risk context on motives for subjects who accepted the restriction

	(1) MotiveAcceptingRisk1	(2) MotiveAcceptingRisk2	(3) MotiveAcceptingRisk3	(4) MotiveAcceptingRisk4
Outgroup Interventionist	-0.0287	-0.0825	-0.169***	-0.174***
	(0.808)	(0.233)	(0.010)	(0.005)
Constant	3.085***	1.314***	1.294***	1.261***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	313	313	313	313
R^2	0.000	0.005	0.022	0.026

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.18: Treatment effects in the time context on motives for accepted who lifted the restriction

	(1) MotiveAcceptingTime1	(2) MotiveAcceptingTime2	(3) MotiveAcceptingTime3	(4) MotiveAcceptingTime4
Outgroup Interventionist	0.0625	-0.212**	-0.265***	-0.233***
	(0.646)	(0.013)	(0.002)	(0.003)
Constant	3.030***	1.406***	1.414***	1.353***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	241	241	241	241
R^2	0.001	0.024	0.037	0.035

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.19: Correlations between motives

	Motive1	Motive2	Motive3	Motive4
Motive1	1			
Motive2	0.0721	1		
Motive3	0.0195	0.683***	1	
Motive4	0.0333	0.721***	0.883***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix A.6. Additional Results: Beliefs about Interventionist

Table A.20: Effects on surprise and perceived reasonableness of restrictions

	(1)	(2)
	Surprised	Restrictions Resonable
Outgroup Interventionist	-0.353***	-0.676***
	(0.000)	(0.001)
Constant	0.526***	4.254***
	(0.000)	(0.000)
Observations	604	604
R^2	0.138	0.019

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. "Surprised" is a dummy imdicating whether or not a subject was surprised that the inverntionist imposed the restrictions on her; "RestrictionsReasonable" ranges from 1 to 10.

Table A.21: Interaction strong identifier and treatment on beliefs about motives of interventionist

	(1) IntHarmsMe	(2) IntProtectsMe	(3) IntWantsPower
Outgroup Interventionist=1	0.650***	-0.560***	0.546***
	(0.000)	(0.000)	(0.000)
Strong Identifier=1	-0.111	0.00690	-0.217*
	(0.245)	(0.940)	(0.055)
Outgroup Interventionist=1 × Strong Identifier=1	0.331**	-0.0558	0.499***
	(0.015)	(0.652)	(0.000)
Constant	2.159***	1.993***	2.731***
	(0.000)	(0.000)	(0.000)
Observations	604	604	604
R^2	0.203	0.133	0.200

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The dummy variable "Strong Identifier" takes the value 1 if the subject reported to feel extreme hate or extreme love towards Donald Trump and 0 otherwise.

Appendix A.7. Additional Results: Interventionist Behavior

Table A.22: Lifting restrictions and imposing restrictions on others

	Share of taking control
ImposeRestrictions	-0.170***
	(0.000)
_cons	0.609***
	(0.000)
N	604
R^2	0.045

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. "ImposeRestrictions" is a dummy that equals 1 if the subject imposed the restrictions on another participant whose political affiliation is unclear.

Appendix B. Second Experiment

Appendix B.1. Additional Results: Motives

We measured the following motives:

- Instrumental Motives: Motive 1
- General Autonomy Motives: Motive 2
- Motives to be independent from interventionist: Motive 3
- Motives concerning interventionist having control: Motive 4

Table B.23: Motives for lifting/accepting choice restrictions pooled

	Motive1	Motive2	Motive3	Motive4
mean	3.407781	2.419308	1.833601	1.975504
N	694			

Notes. Note that this table includes motives for lifting AND accepting. Thus, the "direction" of the motives is not the same. Hence, the values are a measure of the overall importance of the respective motive, but not of the direction of it. For instance, a high value of Instrumental motives does not imply whether subjects always have strong instrumental motives for lifting or accepting the restriction.

Table B.24: Motives for **lifting** restrictions

	MotiveLiftingAltruism1	MotiveLiftingAltruism2	MotiveLiftingAltruism3	MotiveLiftingAltruism4
mean	3.491765	3.171765	2.308235	2.527059
N	425			

	MotiveLiftingRisk1	MotiveLiftingRisk2	MotiveLiftingRisk3	MotiveLiftingRisk4
mean	3.777391	2.737391	2.050435	2.189565
N	575			

	MotiveLiftingTime1	MotiveLiftingTime2	MotiveLiftingTime3	MotiveLiftingTime4
mean	3.640704	2.773869	2.012563	2.175879
N	398			

Table B.25: Motives for **accepting** restrictions

	MotiveAcceptingAltruism1	MotiveAcceptingAltruism2	MotiveAcceptingAltruism3	MotiveAcceptingAltruism4
mean	2.810409	1.587361	2.208696	1.35316
N	531			

	MotiveAcceptingRisk1	MotiveAcceptingRisk2	MotiveAcceptingRisk3	MotiveAcceptingRisk4
mean	2.478992	1.453782	1.470588	1.403361
N	119			

	MotiveAcceptingTime1	MotiveAcceptingTime2	MotiveAcceptingTime3	MotiveAcceptingTime4
mean	3.172297	1.388514	1.35473	1.293919
N	296			

Table B.26: Treatment effects in the altruism context on motives for subjects who lifted the restriction

	(1) MotiveLiftingAltruism1	(2) MotiveLiftingAltruism2	(3) MotiveLiftingAltruism3	(4) MotiveLiftingAltruism4
Outgroup Interventionist	-0.00131	0.219**	1.175***	0.831***
	(0.987)	(0.020)	(0.000)	(0.000)
Constant	3.492***	3.055***	1.683***	2.085***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	425	425	425	425
R^2	0.000	0.013	0.229	0.120

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.27: Treatment effects in the risk context on motives for subjects who lifted the restriction

	(1) MotiveLiftingRisk1	(2) MotiveLiftingRisk2	(3) MotiveLiftingRisk3	(4) MotiveLiftingRisk4
Outgroup Interventionist	-0.0294	0.281***	0.809***	0.785***
	(0.554)	(0.002)	(0.000)	(0.000)
Constant	3.792***	2.595***	1.641***	1.792***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	575	575	575	575
R^2	0.001	0.016	0.121	0.111

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.28: Treatment effects in the time context on motives for subjects who lifted the restriction

	(1) MotiveLiftingTime1	(2) MotiveLiftingTime2	(3) MotiveLiftingTime3	(4) MotiveLiftingTime4
Outgroup Interventionist	-0.0192	0.416***	0.981***	0.849***
	(0.796)	(0.000)	(0.000)	(0.000)
Constant	3.651***	2.556***	1.497***	1.730***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	398	398	398	398
R^2	0.000	0.035	0.174	0.129

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.29: Treatment effects in the altruism context on motives for subjects who accepted the restriction

	(1) MotiveAcceptingAltruism1	(2) MotiveAcceptingAltruism2	(3) MotiveAcceptingAltruism3	(4) MotiveAcceptingAltruism4
Outgroup Interventionist	-0.0516	-0.334***	0.754***	-0.339***
	(0.704)	(0.002)	(0.000)	(0.000)
Constant	2.832***	1.729***	1.751***	1.497***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	269	269	460	269
R^2	0.001	0.031	0.090	0.047

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.30: Treatment effects in the risk context on motives for subjects who accepted the restriction

	(1) MotiveAcceptingRisk1	(2) MotiveAcceptingRisk2	(3) MotiveAcceptingRisk3	(4) MotiveAcceptingRisk4
Outgroup Interventionist	-0.120	-0.424***	-0.384**	-0.339**
	(0.555)	(0.004)	(0.012)	(0.023)
Constant	2.529***	1.629***	1.629***	1.543***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	119	119	119	119
R^2	0.003	0.058	0.045	0.037

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.31: Treatment effects in the time context on motives for accepted who lifted the restriction

	(1) MotiveAcceptingTime1	(2) MotiveAcceptingTime2	(3) MotiveAcceptingTime3	(4) MotiveAcceptingTime4
Outgroup Interventionist	-0.186	-0.0944	-0.171*	-0.103
	(0.125)	(0.331)	(0.069)	(0.215)
Constant	3.255***	1.430***	1.430***	1.339***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	296	296	296	296
R^2	0.008	0.003	0.011	0.005

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.32: Correlations between motives

	Motive1	Motive2	Motive3	Motive4
Motive1	1			
Motive2	0.178***	1		
Motive3	0.0711	0.641***	1	
Motive4	0.0903*	0.695***	0.889***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix B.2. Additional Results: Beliefs about Motives of Interventionist

Table B.33: Beliefs about Motives of Interventionist across Contexts

	IntHarmsMeAltruism	IntProtectsMeAltruism	IntWantsPowerAltruism
mean	2.425072	1.808357	3.158501
N	694		

	IntHarmsMeRisk	IntProtectsMeRisk	IntWantsPowerRisk
mean	2.766571	1.517291	3.237752
N	694		

	IntHarmsMeTime	IntProtectsMeTime	IntWantsPowerTime
mean	2.603746	1.636888	3.129683
N	694		

Table B.34: Beliefs about Motives of Interventionist across Restrictions in the Altruism context

	Prosocial Restriction		
	IntHarmsMeAltruism	IntProtectsMeAltruism	IntWantsPowerAltruism
mean	2.692771	1.608434	3.195783
N	332		

	Antisocial Restriction		
	IntHarmsMeAltruism	IntProtectsMeAltruism	IntWantsPowerAltruism
mean	2.179558	1.991713	3.124309
N	362		

Table B.35: Treatment effects on beliefs about benevolence across contexts

	Dependent variable: Belief in benevolence		
	(1)	(2)	(3)
	Altruism	Risk	Time
Outgroup Interventionist	-0.249***	-0.205***	-0.219***
	(0.000)	(0.000)	(0.000)
Constant	0.480***	0.380***	0.430***
	(0.000)	(0.000)	(0.000)
Observations	694	694	694
R^2	0.258	0.211	0.211

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes. The benevolence index ranges from 0 (malevolent) to 1 (benevolent).

Table B.36: Predictive power of beliefs on behavior

	(1) TakeControlAltruism	(2) TakeControlRisk	(3) TakeControlTime
BenevolenceAltruism	-0.694***		
	(0.000)		
BenevolenceRisk		-0.285***	
		(0.000)	
BenevolenceTime			-0.589***
			(0.000)
_cons	0.861***	0.908***	0.763***
	(0.000)	(0.000)	(0.000)
N	694	694	694
R^2	0.121	0.029	0.081

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.37: Imposing restrictions on other subjects

	(1)
	Mean
ImposeResOnIngroup	0.141
	(0.0132)
ImposeRestrictions	0.206
	(0.0154)
ImposeResOnOutgroup	0.331
	(0.0179)
N	694

Standard errors in parentheses

Notes. The three variables are dummies that indicate whether the subject decided to impose the restriction on an ingroup member, somebody with unclear political affiliation, and an outgroup member.

Table B.38: Lifting restrictions and imposing restrictions on others

	(1)
	Share of taking control
ImposeRestrictions	-0.150***
	(0.000)
_cons	0.702***
	(0.000)
N	694
R^2	0.043

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

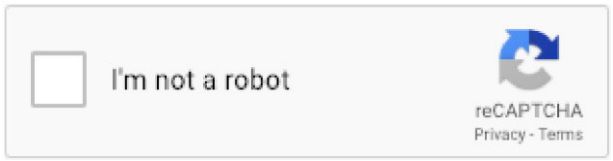
Notes. "ImposeRestrictions" is a dummy that takes the value of 1 if the subject imposed the restrictions on somebody with unclear political affiliation.

Survey Study 1

Variable names are added in **bold script.**

Start of Block

Please confirm:



End of Block

Start of Block

consent

Dear participant, welcome to this research study! Please review the following consent form before proceeding with our survey.

DESCRIPTION: You will be asked to answer questions about yourself and to make judgments or decisions about things that you are likely to encounter in your everyday life. Also, you will make decisions in economic games. The survey will take approximately 10 minutes to complete.

PAYMENT: You will receive a guaranteed participation compensation. Additionally, you might earn a bonus depending on the actions that you and other participants take. Please make sure that you click through to the end of the survey to be redirected to Prolific. We can only recompense participants who give answers to all questions and complete the last page of the study.

RISK AND BENEFITS: The risks to your participation in this online study are those associated with basic surveys including the recall of pleasant or unpleasant past experiences, such as mild stress. The benefit to you is the learning experience from participating in a research study. The benefit to society is the contribution to scientific knowledge.

PARTCIPANT RIGHTS: Your participation is voluntary. You have the right to see or withdraw your data at any time. Your responses will be recorded in a completely anonymous way. To secure the transparency of scientific findings, the completely anonymized data set will be

published and made available to other researchers. Your prolific ID is only collected for purposes of payment. The dataset containing your prolific ID will be stored anonymously and in accordance with European data protection laws and will not be made available to others.

If you have any questions about this project or if you have a research-related problem, you may contact the principle investigator: Lukas Reinhardt, reinhardt@wiso.uni-koeln.de.

I am age 18 or older.
I have read and understand the information above.
I want to participate in this research and continue with the survey.

- ○ Yes
- ○ No

End of Block

Start of Block

prolificID What is your Prolific ID?
Please note that this response should auto-fill with the correct ID

_____

End of Block

Start of Block

opinionTrump What do you feel towards the person above (with a focus on the time when he was president of the United States)?

Extreme Hate	Moderate Hate	Indifference	Moderate Love	Extreme Love
-2	-1	0	1	2

opinionTrumpVerbal Please explain your choice in a few sentences:

End of Block

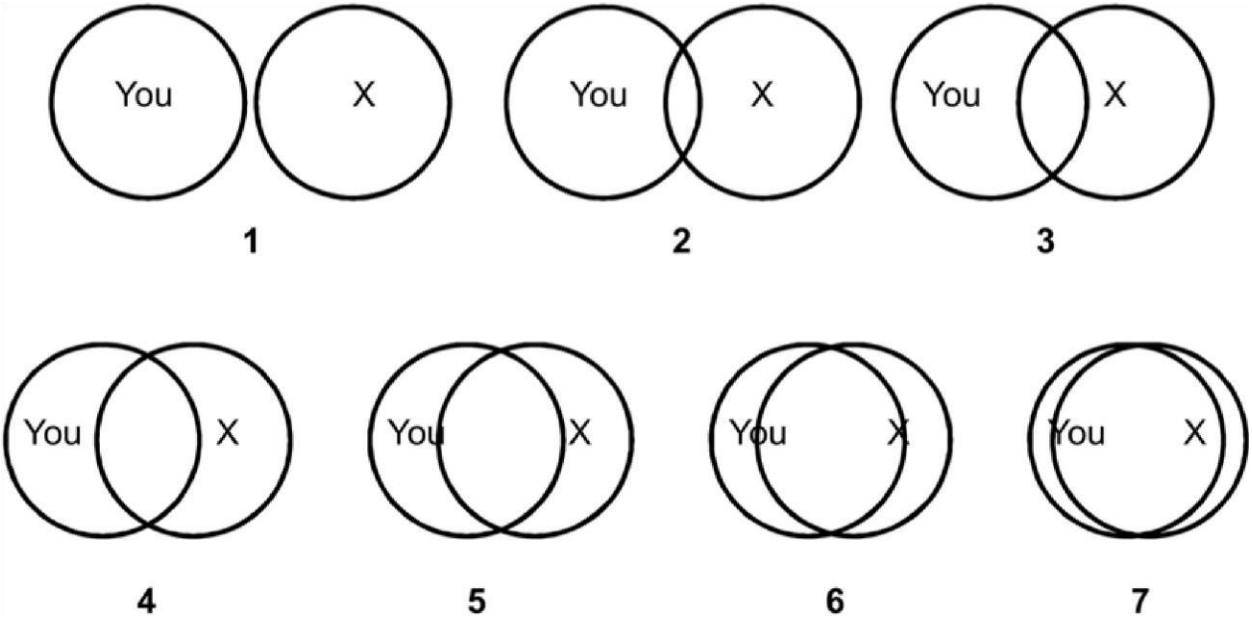
Start of Block

The two following blocks that measure closeness to Trump Haters and Trump Lovers are randomized between subjects.

The circle pairs below describe different degrees how close you might feel to another person X.

Circle pair 1 describes the **least possible closeness.**

Circle pair 7 describes the **highest possible closeness.**



closenessTLrando1 Which circle pair describes your feelings towards a person who feels **Love** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

---

closenessTHrando1 Which circle pair describes your feelings towards a person who feels **Hate** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

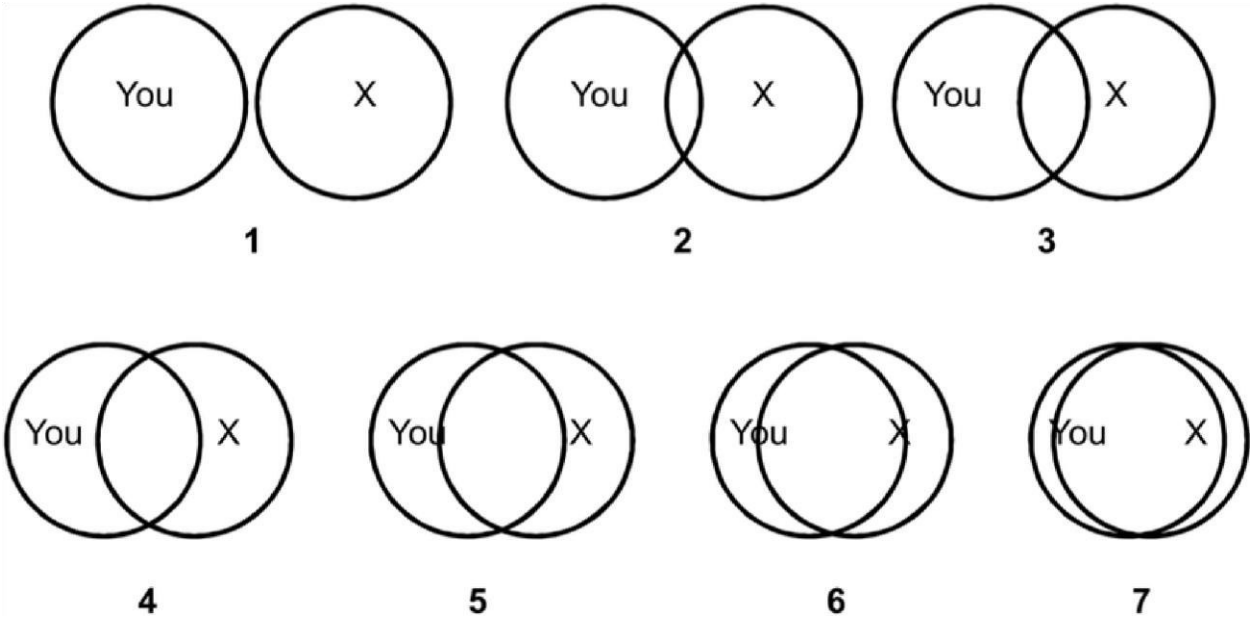
End of Block

Start of Block

The circle pairs below describe different degrees how close you might feel to another person X.

Circle pair 1 describes the **least possible closeness.**

Circle pair 7 describes the **highest possible closeness.**



closenessTHrando2 Which circle pair describes your feelings towards a person who feels **Hate** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

closenessTLrando2 Which circle pair describes your feelings towards a person who feels **Love** for Donald Trump?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7

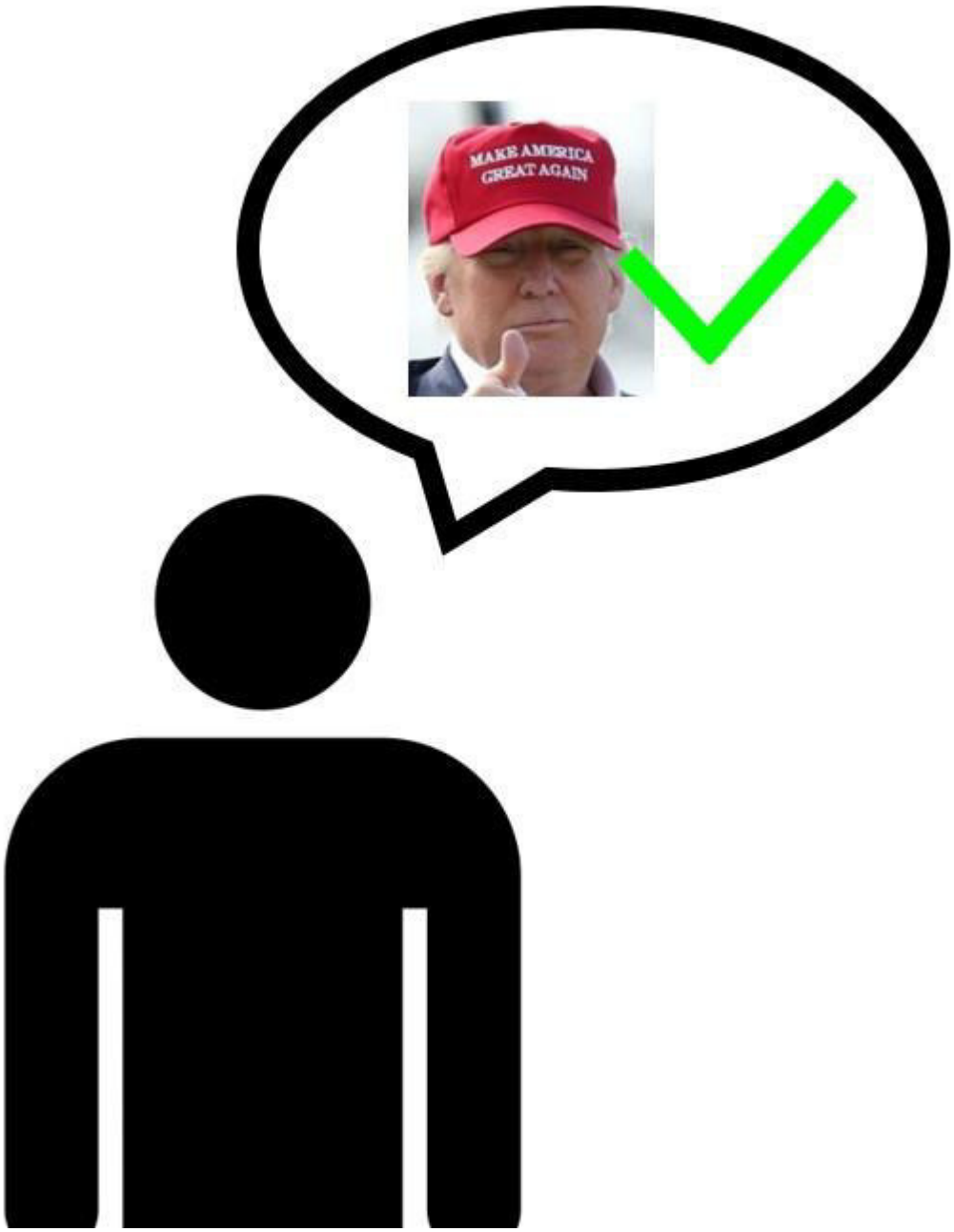
End of Block

Start of Block

Display This Question:

If interventionist = Trump Lover

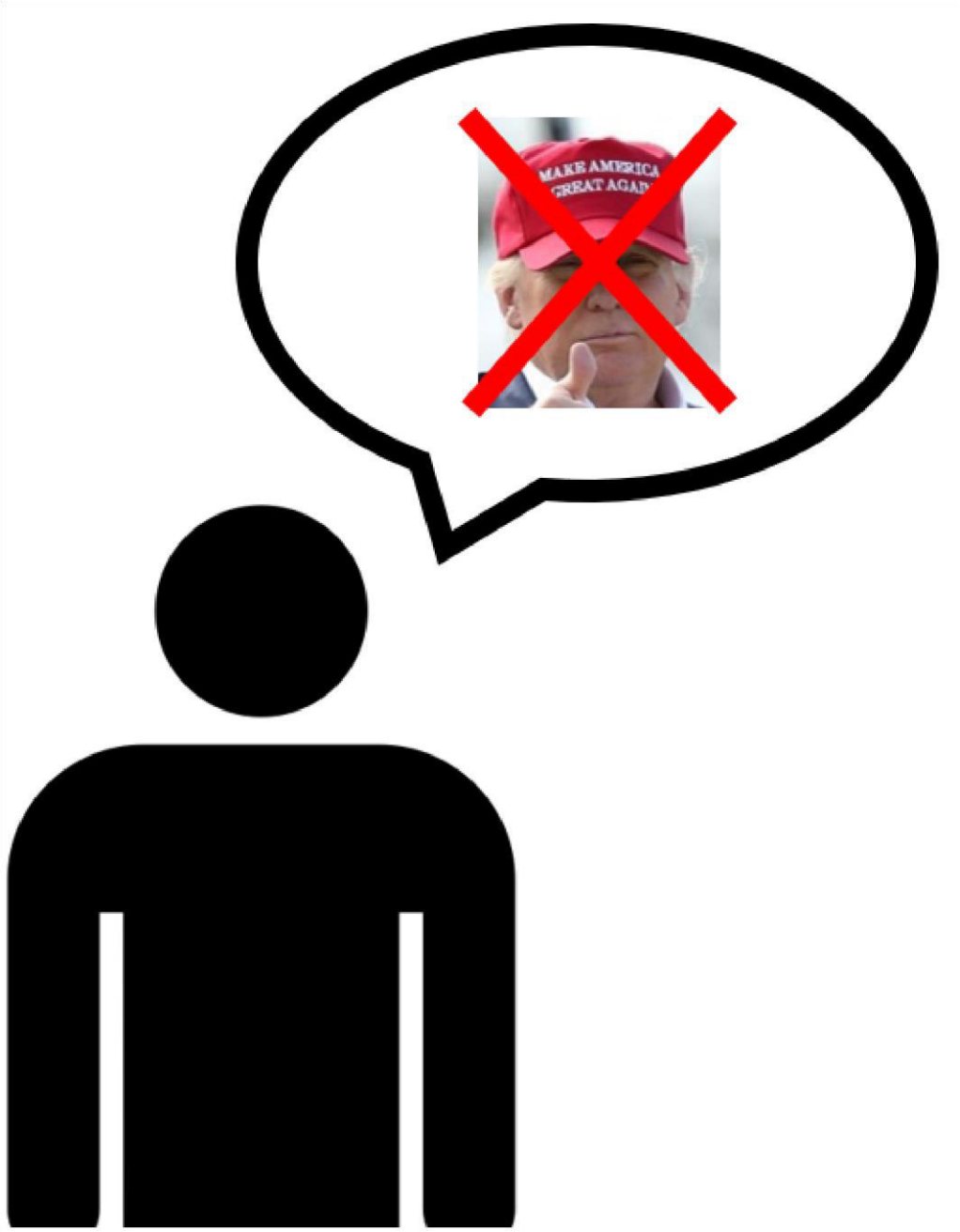
For the rest of the study you are matched to **another participant of this study** who indicated to **feel Love for Donald Trump**:



Display This Question:

If interventionist = Trump Hater

For the rest of the study you are matched to **another participant of this study** who indicated to **feel Hate for Donald Trump**:



Page Break

Procedure of this study: In the following you have to make decisions in 3 stages. The {Trump hater, Trump lover} might interfere in these decisions. We explain to you later how this works in detail.

Information how we calculate your bonus: You get a starting bonus of 10 cents on top of your fixed payment. In each stage, you can win or lose some money and sometimes affect payments of other participants. One of these stages will be randomly picked and we pay you the bonus you earned in this stage on your Prolific account. If you affect payments of other participants in this stage, then we also pay them the respective amount of money. If you lose money in the stage that is randomly picked, we deduct that amount from your starting bonus. You cannot lose more than your starting bonus.

End of Block

Start of Block

- Stage 1/3 -

End of Block

Start of Block

The altruism, risk, and time context are displayed in random order

In the following you get $1 and you can decide how much you share with another random participant. Let's call this person {Alexandra, Alexander}.

understoodAltruism Have you understood that?

- ○ Yes
- ○ No

Page Break

Display This Question:

If understoodAltruism=No

Please read the information again carefully!

In the following you get $1 and you can decide how much you share with another random participant. Let's call this person {Alexandra, Alexander}.

Page Break

Display This Question:

If restrictionAltruism=prosocial

The {Trump hater, Trump lover} who we introduced to you in the beginning decided to forbid you to share less than 60 cents with {Alexandra, Alexander}:

Display This Question:

If restrictionAltruism=antisocial

The {Trump hater, Trump lover} who we introduced to you in the beginning decided to forbid you to share anything with {Alexandra, Alexander}:

Display This Question:

If interventionist = Trump Hater

And If restrictionAltruism = prosocial

Display This Question:

If interventionist = Trump Hater

And If restrictionAltruism = antisocial

Display This Question:

If interventionist = Trump Lover

And If restrictionAltruism = prosocial

Display This Question:

If interventionist = Trump Lover

And If restrictionAltruism = antisocial

takeControlAltruism What do you want to do? No other participant will observe your actions.

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (split the money as you see fit)

Page Break

Display This Question:

If takeControlAltruism = Pay 10 cents to take back full control (split the money as you see fit)

dGGiving1 How much do you want to share with {Alexandra, Alexander} (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your choice:

Display This Question:

If takeControlAltruism = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

And If restrictionAltruism = prosocial

dGGiving2 How much do you want to share with {Alexandra, Alexander} (in cents)?

60 70 80 90 100

Your choice:

Display This Question:

If takeControlAltruism = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

And If restrictionAltruism = antisocial

You share nothing and keep everything for yourself.

End of Block

Start of Block

- Stage 2/3 -

End of Block

Start of Block

In the following, you can make a choice between risky lotteries and less risky lotteries.

Here are your options:

-**Option A:** Get $1 with 50% probability and $0 with 50% probability

-**Option B:** Get $0.75 with 50% probability and $0.25 with 50% probability

-**Option C:** Get $0.5 for sure

understoodRisk Have you understood that?

- ○ Yes
- ○ No

Page Break

Display This Question:

If understoodRisk = No

Please read the following information again carefully!

In the following, you can make a choice between risky lotteries and less risky lotteries.

Here are your options:

-**Option A:** Get $1 with 50% probability and $0 with 50% probability

-**Option B:** Get $0.75 with 50% probability and $0.25 with 50% probability

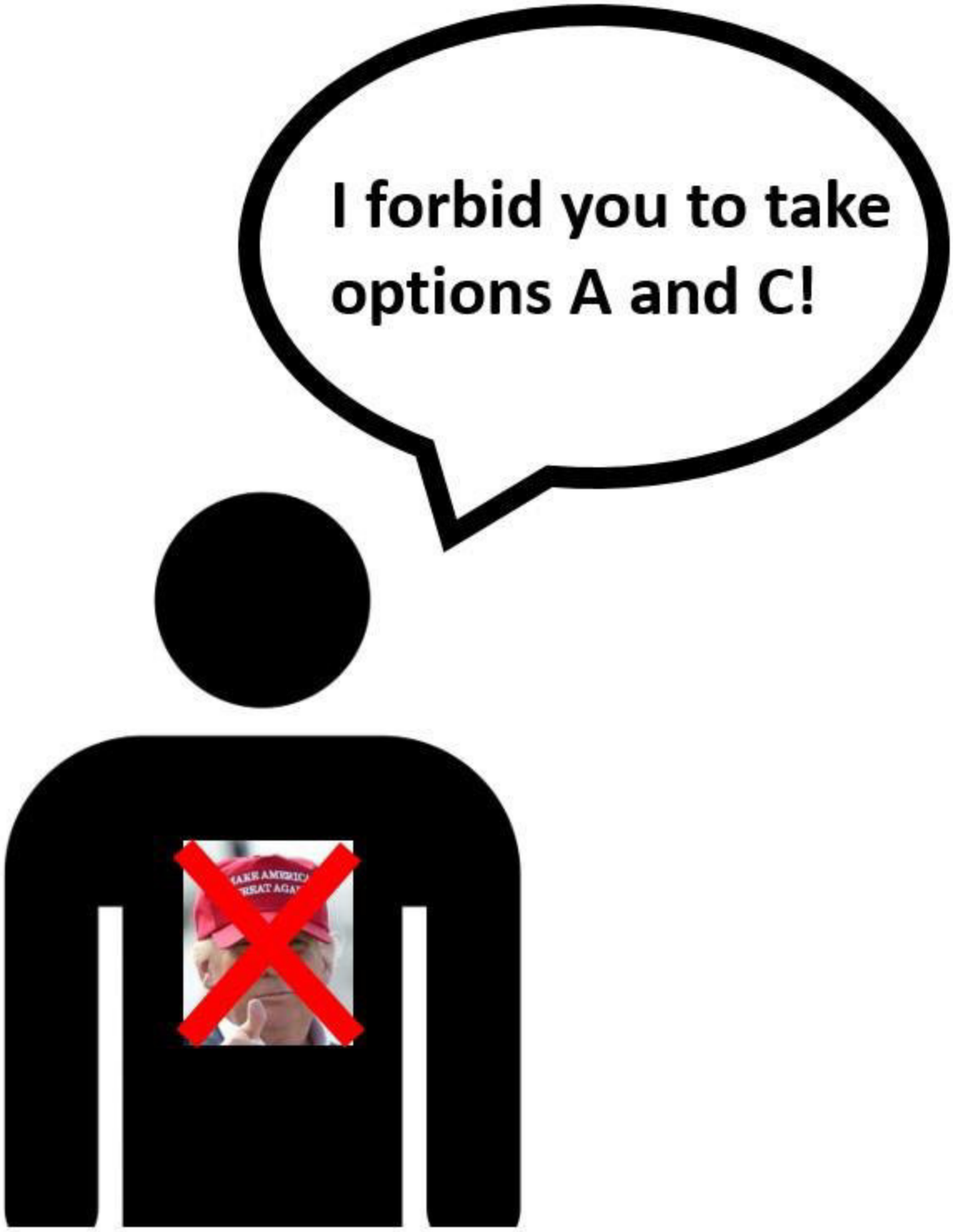
-**Option C:** Get $0.5 for sure

Page Break

Q581
The {Trump hater, Trump lover} who we introduced to you in the beginning has decided to forbid you to take options A ($1 with 50% and 0$ with 50%) and C (Get $0.5 for sure).

Display This Question:

If interventionist = Trump Hater



Display This Question:

If interventionist = Trump Lover


I forbid you to take options A and C!
MAKE AMERICA GREAT AGAIN

takeControlRisk What do you want to do?

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (make a free choice between all 3 options)

Page Break

Display This Question:

If takeControlRisk = Pay 10 cents to take back full control (make a free choice between all 3 options)

choiceRisk Which lottery do you choose?

- ○ Option A: Get $1 with 50% probability and $0 with 50% probability
- ○ Option B: Get $0.75 with 50% probability and $0.25 with 50% probability
- ○ Option C: Get $0.5 for sure

Display This Question:

If takeControlRisk = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

You get option B.

End of Block

Start of Block

- Stage 3/3 -

End of Block

Start of Block

In the following, you can make a choice between **two options:**

Here are your options:

-**Option A:** You get $0.30 right after this study

-**Option B:** You get $1 one month later

Page Break

The {Trump hater, Trump lover} who we introduced to you in the beginning has decided to forbid you to take option B (get $1 one month later):

Display This Question:

If interventionist = Trump Hater

Display This Question:

If interventionist = Trump Lover


I forbid you to take option B!
MAKE AMERICA GREAT AGAIN

takeControlTime What do you want to do?

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (make a free choice between the two options)

Page Break

Display This Question:

If takeControlTime = Pay 10 cents to take back full control (make a free choice between the two options)

choiceTime Which option do you choose?

- ○ **Option A:** Get $0.30 right after this study
- ○ **Option B:** Get $1 one month later

Display This Question:

If takeControlTime = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

You get option A.

End of Block

Start of Block

Thank you for completing all 3 stages!

On the last pages of this study we have some questions about your decisions.

End of Block

Start of Block

Display This Question:

If takeControlAltruism = 1

And restrictionAltruism = prosocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share less than 60 cents and you decided to lift this choice restriction.

reasonAltruism1 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlAltruism = 0

And restrictionAltruism = prosocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share less than 60 cents and you decided to accept the choice restriction.

reasonAltruism2 Why did you accept the choice restriction?

_____

Display This Question:

If takeControlAltruism = 1

And restrictionAltruism = antisocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share anything and you decided to lift this choice restriction.

reasonAltruism3 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlAltruism = 0

And restrictionAltruism = antisocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share anything and you decided to accept the choice restriction.

reasonAltruism4 Why did you accept the choice restriction?

_____

Page Break

Display This Question:

If takeControlAltruism = 1

Q619 Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "splitting money" stage).

motiveLiftingAltruism_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose a split of money that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlAltruism = 0

Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "splitting money" stage).

motiveAcceptingAltruism_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I was still able to choose the split I liked best/ It wasn't that important for me to get another a split.	○	○	○	○
I liked it that somebody else made (part of) the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made (part of) the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

Display This Question:

If takeControlRisk = 1

In one stage you had to **choose between different risky lotteries.**

The {Trump hater, Trump lover} forbade you take options A ($1 with 50% and 0$ with 50%) and C (Get $0.5 for sure) and you decided to lift this choice restriction.

reasonRisk1 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlRisk = 0

In one stage you had to **choose between different risky lotteries.**

The {Trump hater, Trump lover} forbade you take options A ($1 with 50% and 0$ with 50%) and C (Get $0.5 for sure) and you decided to accept this choice restriction.

reasonRisk2 Why did you accept the choice restriction?

_____

Page Break

Display This Question:

If takeControlRisk = 1

Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "risky lottery" stage).

motiveLiftingRisk_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose a lottery that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlRisk = 0

Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "risky lottery" stage).

motiveAcceptingRisk_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I liked the lottery best that was chosen for me/ It wasn't that important for me to get another lottery.	○	○	○	○
I liked it that somebody else made the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

Display This Question:

If takeControlTime = 1

In one stage you had to **choose between receiving a low payment after the study ($0.30) or receiving a high payment ($1) one month later.**

The {Trump hater, Trump lover} forbade you take option B (receiving $1 one month later) and you decided to lift this choice restriction.

reasonTime1 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlTime = 0

In one stage you had to **choose between receiving a low payment after the study ($0.30) or receiving a high payment ($1) one month later.**

The {Trump hater, Trump lover} forbade you take option B (receiving $1 one month later) and you decided to accept this choice restriction.

reasonTime2 Why did you accept the choice restriction?

_____

Page Break

Display This Question:

If takeControlTime = 1

Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "money now or later" stage).

motiveLiftingTime_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose a payment option that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlTime = 0

Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "money now or later" stage).

motiveAcceptingTime_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I liked the payment option best that was chosen for me/ It wasn't that important for me to get another payment option.	○	○	○	○
I liked it that somebody else made the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

surprised Was it surprising to you that the {Trump hater, Trump lover} imposed these kind of restrictions on you?

- ○ Yes, it was surprising
- ○ No, it was not surprising

Page Break

restrictionsResonable How reasonable did you find the choice restrictions?

"1" means very unreasonable

"10" means very reasonable

Page Break

belief_1-3 and attentionCheck What do you think about the motives of the {Trump hater, Trump lover} to make the restrictions?

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
The {Trump hater, Trump lover} made the restrictions to harm me	○	○	○	○
The {Trump hater, Trump lover} made the restrictions to protect me and others against bad decisions	○	○	○	○
The {Trump hater, Trump lover} made the restrictions because he/she likes to feel powerful	○	○	○	○
This is a short attention check. Please click "Somewhat agree"	○	○	○	○

End of Block

Start of Block

imposeRestrictions Would you like to impose the same restrictions you faced on other future participants?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

End of Block

Start of Block

imposeRestrictionsOnTH Would you like to impose the same restrictions you faced on another future participant who **hates Trump**?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

imposeRestrictionsOnTL Would you like to impose the same restrictions you faced on another future participant who **loves Trump**?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

End of Block

Start of Block

gender What is your gender?

- ○ Male
- ○ Female
- ○ Other

---

age How old are you (in years)?

▼ 18 ... 99

---

race Please tell us which racial category you identify with:

- ○ White
- ○ Black or African American
- ○ Asian
- ○ Hispanic or Latino
- ○ Other
- ○ None

---

education What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ More than master's degree

---

voter Did you vote in the 2020 US Presidential Election?

- ○ Yes
- ○ No

End of Block

Start of Block

feedback Thank you very much for your effort!

Do you have any feedback for us? Was anything unclear?

_____

Please click on the button below to proceed to Prolific!

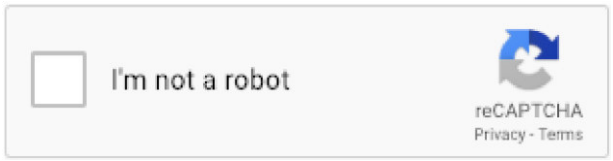
End of Block

Survey Study 2

Variable names are added in **bold script.**

Start of Block

Please confirm:



End of Block

Start of Block

consent

Dear participant, welcome to this research study! Please review the following consent form before proceeding with our survey.

DESCRIPTION: You will be asked to answer questions about yourself and to make judgments or decisions about things that you are likely to encounter in your everyday life. Also, you will make decisions in economic games. The survey will take approximately 10 minutes to complete.

PAYMENT: You will receive a guaranteed participation compensation. Additionally, you might earn a bonus depending on the actions that you and other participants take. Please make sure that you click through to the end of the survey to be redirected to Prolific. We can only recompense participants who give answers to all questions and complete the last page of the study.

RISK AND BENEFITS: The risks to your participation in this online study are those associated with basic surveys including the recall of pleasant or unpleasant past experiences, such as mild stress. The benefit to you is the learning experience from participating in a research study. The benefit to society is the contribution to scientific knowledge.

PARTCIPANT RIGHTS: Your participation is voluntary. You have the right to see or withdraw your data at any time. Your responses will be recorded in a completely anonymous way. To secure the transparency of scientific findings, the completely anonymized data set will be

published and made available to other researchers. Your prolific ID is only collected for purposes of payment. The dataset containing your prolific ID will be stored anonymously and in accordance with European data protection laws and will not be made available to others.

If you have any questions about this project or if you have a research-related problem, you may contact the principle investigator: Lukas Reinhardt, reinhardt@wiso.uni-koeln.de.

I am age 18 or older.
I have read and understand the information above.
I want to participate in this research and continue with the survey.

- ○ Yes
- ○ No

End of Block

Start of Block

prolificID What is your Prolific ID?
Please note that this response should auto-fill with the correct ID

_____

End of Block

Start of Block

opinionTrump What do you feel towards the person above (with a focus on the time when he was president of the United States)?

	Extreme Hate	Moderate Hate	Indifference	Moderate Love	Extreme Love
	-2	-1	0	1	2

opinionTrumpVerbal Please explain your choice in a few sentences:

_____

_____

_____

_____

_____

End of Block

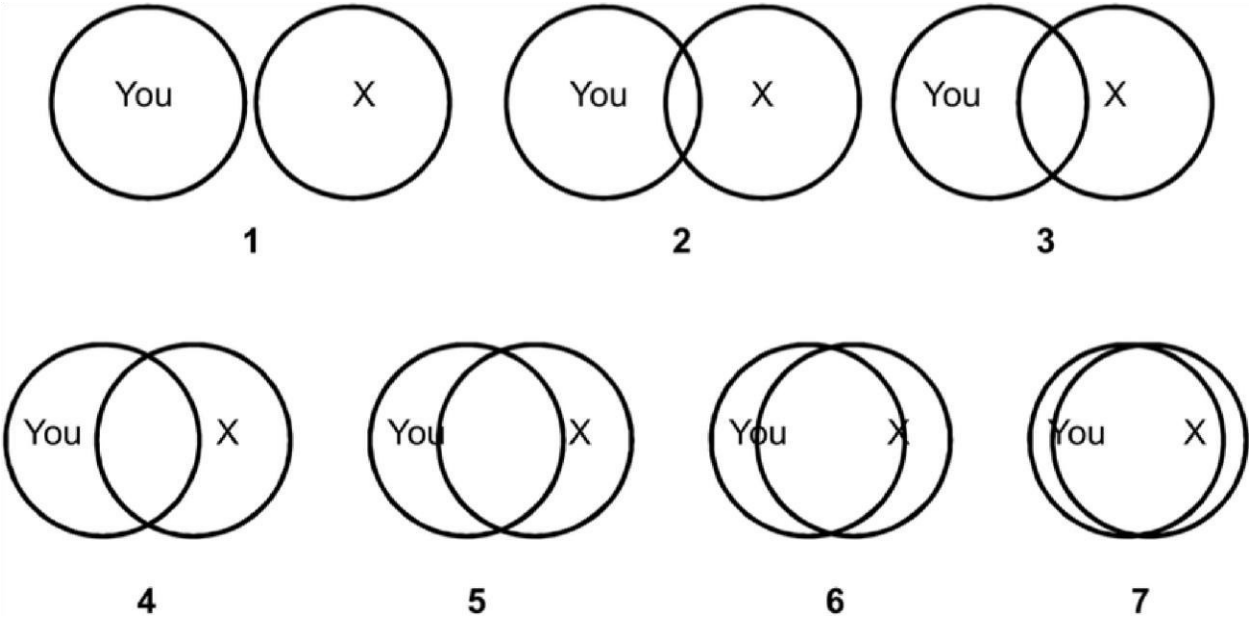
Start of Block

The two following blocks that measure closeness to Trump Haters and Trump Lovers are randomized between subjects.

The circle pairs below describe different degrees how close you might feel to another person X.

Circle pair 1 describes the **least possible closeness.**

Circle pair 7 describes the **highest possible closeness.**



closenessTLrando1 Which circle pair describes your feelings towards a person who feels **Love** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

---

closenessTHrando1 Which circle pair describes your feelings towards a person who feels **Hate** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

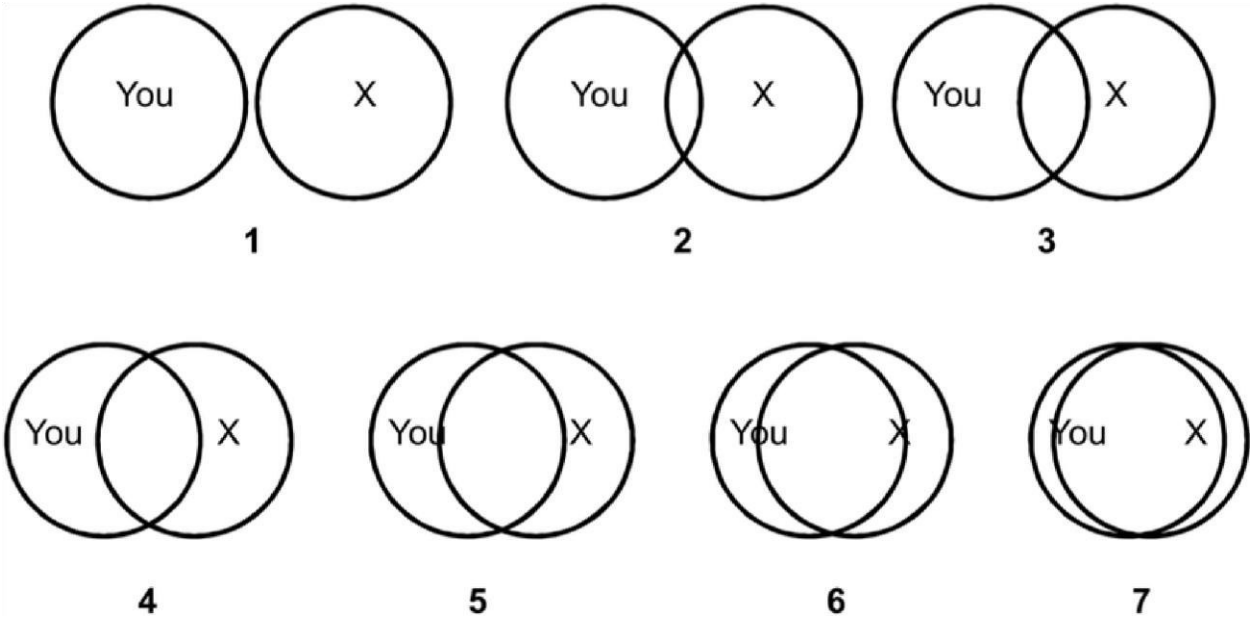
End of Block

Start of Block

The circle pairs below describe different degrees how close you might feel to another person X.

Circle pair 1 describes the **least possible closeness.**

Circle pair 7 describes the **highest possible closeness.**



closenessTHrando2 Which circle pair describes your feelings towards a person who feels **Hate** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

closenessTLrando2 Which circle pair describes your feelings towards a person who feels **Love** for Donald Trump?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

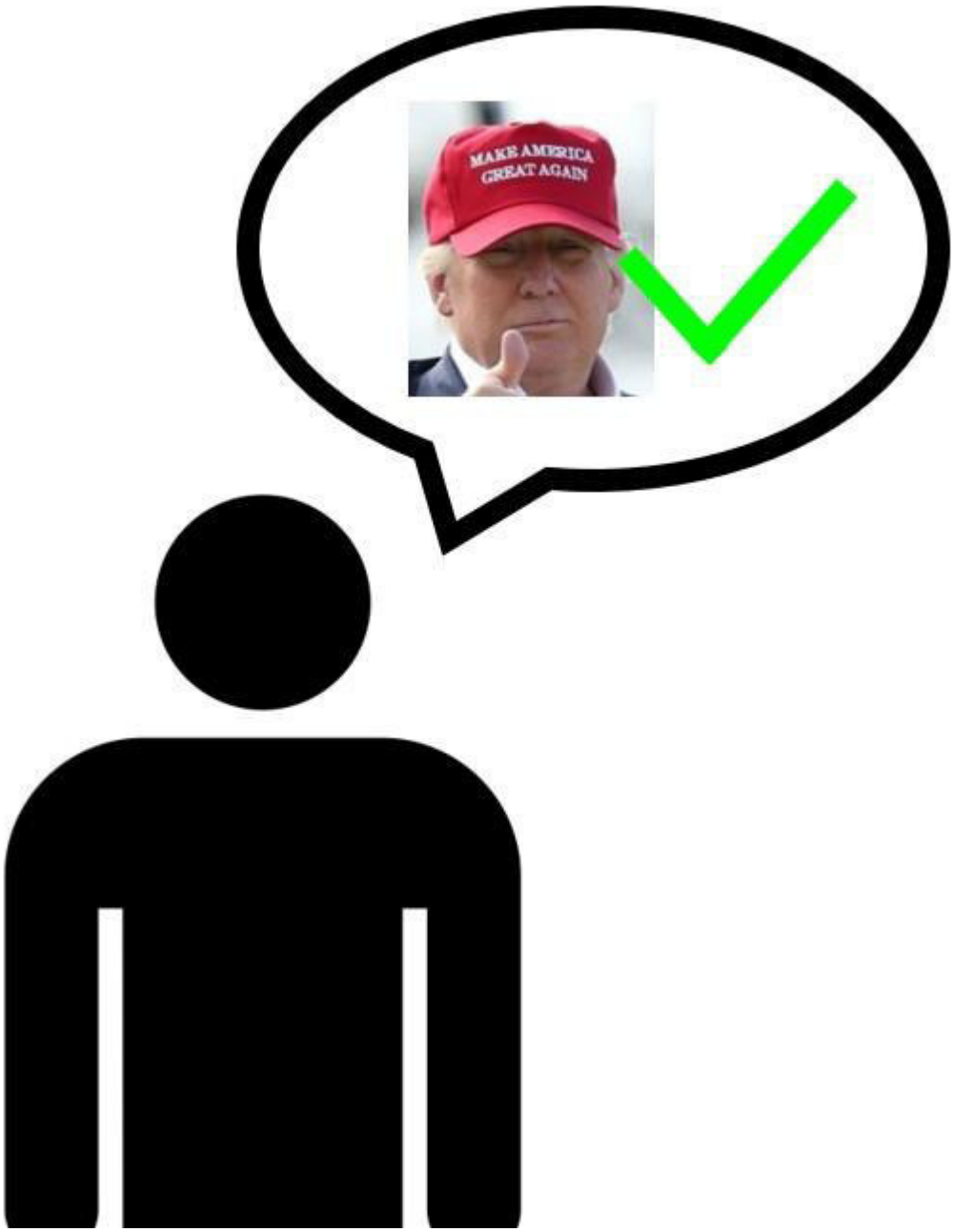
End of Block

Start of Block

Display This Question:

If interventionist = Trump Lover

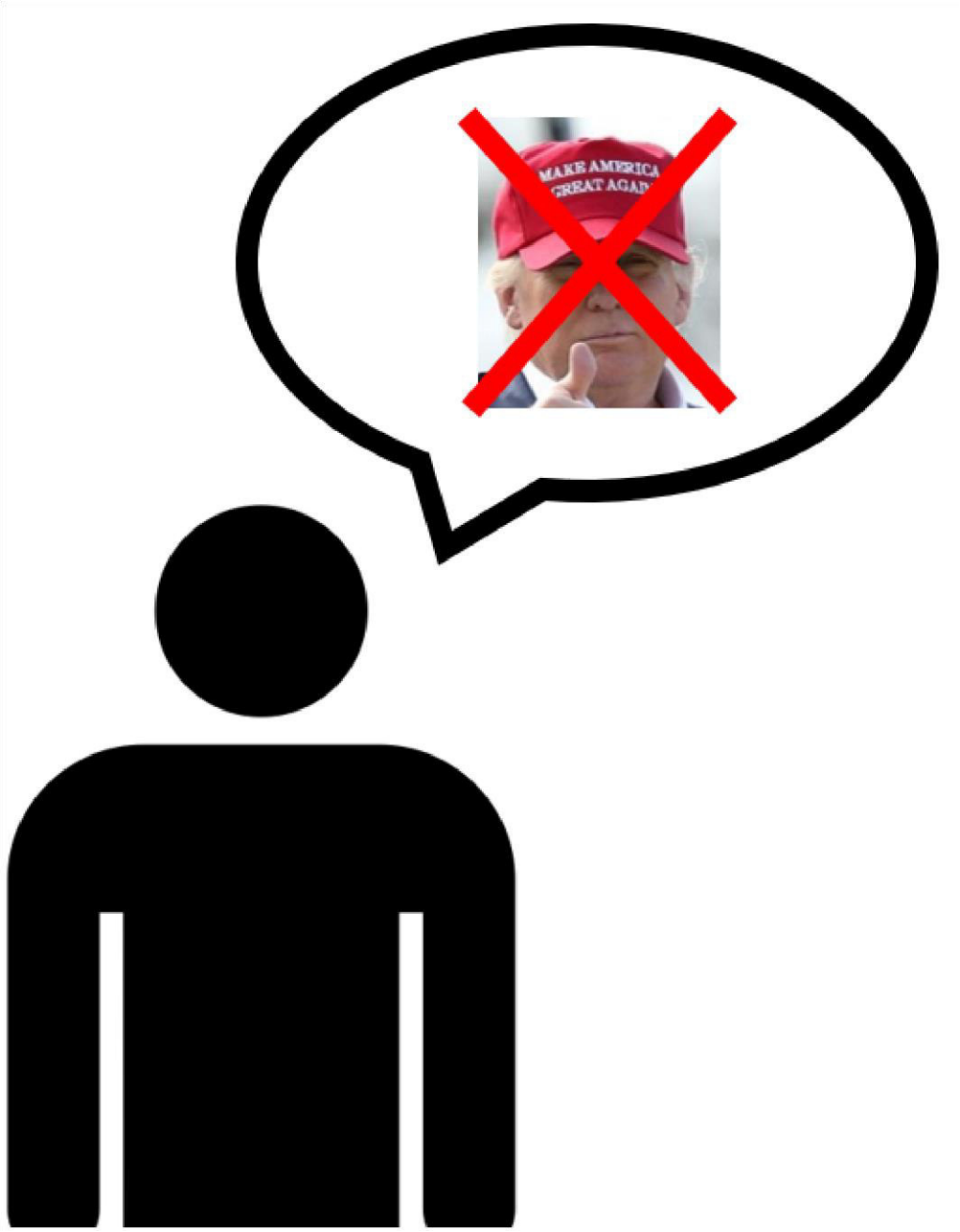
For the rest of the study you are matched to **another participant of this study** who indicated to **feel Love for Donald Trump**:



Display This Question:

If interventionist = Trump Hater

For the rest of the study you are matched to **another participant of this study** who indicated to **feel Hate for Donald Trump**:



Page Break

Procedure of this study: In the following you have to make decisions in 3 stages. The {Trump hater, Trump lover} might interfere in these decisions. We explain to you later how this works in detail.

Information how we calculate your bonus: You get a starting bonus of 10 cents on top of your fixed payment. In each stage, you can win or lose some money and sometimes affect payments of other participants. One of these stages will be randomly picked and we pay you the bonus you earned in this stage on your Prolific account. If you affect payments of other participants in this stage, then we also pay them the respective amount of money. If you lose money in the stage that is randomly picked, we deduct that amount from your starting bonus. You cannot lose more than your starting bonus.

End of Block

Start of Block

- Stage 1/3 -

End of Block

Start of Block

The altruism, risk, and time context are displayed in random order

In the following you get $1 and you can decide how much you share with another random participant. Let's call this person {Alexandra, Alexander}.

understoodAltruism Have you understood that?

- ○ Yes
- ○ No

Page Break

Display This Question:

If understoodAltruism=No

Please read the information again carefully!

In the following you get $1 and you can decide how much you share with another random participant. Let's call this person {Alexandra, Alexander}.

Page Break

Display This Question:

If restrictionAltruism=prosocial

The {Trump hater, Trump lover} who we introduced to you in the beginning decided to forbid you to share less than 60 cents with {Alexandra, Alexander}:

Display This Question:

If restrictionAltruism=antisocial

The {Trump hater, Trump lover} who we introduced to you in the beginning decided to forbid you to share anything with {Alexandra, Alexander}:

Display This Question:

If interventionist = Trump Hater

And If restrictionAltruism = prosocial

Display This Question:

If interventionist = Trump Hater

And If restrictionAltruism = antisocial

Display This Question:

If interventionist = Trump Lover

And If restrictionAltruism = prosocial

Display This Question:

If interventionist = Trump Lover

And If restrictionAltruism = antisocial

takeControlAltruism What do you want to do? No other participant will observe your actions.

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (split the money as you see fit)

Page Break

Display This Question:

If takeControlAltruism = Pay 10 cents to take back full control (split the money as you see fit)

dGGiving1 How much do you want to share with {Alexandra, Alexander} (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your choice:

Display This Question:

If takeControlAltruism = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

And If restrictionAltruism = prosocial

dGGiving2 How much do you want to share with {Alexandra, Alexander} (in cents)?

60 70 80 90 100

Your choice:

Display This Question:

If takeControlAltruism = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

And If restrictionAltruism = antisocial

You share nothing and keep everything for yourself.

Page Break

What do you think about the motives of the {Trump hater, Trump lover} to make the restriction that was just imposed on you?

Display This Question:

If restrictionAltruism = antisocial

(The {Trump hater, Trump lover} forbade you to share anything.)

Display This Question:

If restrictionAltruism = prosocial

(The {Trump hater, Trump lover} forbade you to share less than 60 cents.)

intHarmsMeAltruism, intProtectsMeAltruism, intWantsPowerAltruism Please let us know what you think:

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
The {Trump hater, Trump lover} made this restriction to **harm me**	○	○	○	○
The {Trump hater, Trump lover} made this restriction to **protect me and others** against bad decisions	○	○	○	○
The {Trump hater, Trump lover} made this restriction because he/she likes to **feel powerful**	○	○	○	○

Page Break

Display This Question:

If takeControlAltruism = 1

And restrictionAltruism = prosocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share less than 60 cents and you decided to lift this choice restriction.

reasonAltruism1 Why did you lift the choice restriction?

Display This Question:

If takeControlAltruism = 0

And restrictionAltruism = prosocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share less than 60 cents and you decided to accept the choice restriction.

reasonAltruism2 Why did you accept the choice restriction?

_____

Display This Question:

If takeControlAltruism = 1

And restrictionAltruism = antisocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share anything and you decided to lift this choice restriction.

reasonAltruism3 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlAltruism = 0

And restrictionAltruism = antisocial

In one stage you had to decide **how much money to share** with another participant.

The {Trump hater, Trump lover} forbade you to share anything and you decided to accept the choice restriction.

reasonAltruism4 Why did you accept the choice restriction?

_____

Display This Question:

If takeControlAltruism = 1

Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "splitting money" stage).

motiveLiftingAltruism_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose a split of money that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlAltruism = 0

Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "splitting money" stage).

motiveAcceptingAltruism_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I was still able to choose the split I liked best/ It wasn't that important for me to get another a split.	○	○	○	○
I liked it that somebody else made (part of) the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made (part of) the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

- Stage 2/3 -

End of Block

Start of Block

In the following, you can make a choice between a risky lottery and a save payment.

Here are your options:

-**Option A:** Get $1 with 50% probability and $0 with 50% probability

-**Option B:** Get $0.80 for sure

understoodRisk Have you understood that?

- ○ Yes
- ○ No

Page Break

Display This Question:

If understoodRisk = No

Please read the following information again carefully!

In the following, you can make a choice between a risky lottery and a save payment.

Here are your options:

-**Option A:** Get $1 with 50% probability and $0 with 50% probability

-**Option B:** Get $0.80 for sure

Page Break

The {Trump hater, Trump lover} who we introduced to you in the beginning has decided to forbid you to take option B, the safe payment of $0.80.

Reminder: The option you still have is option A (Get $1 with 50% probability and $0 with 50% probability)

Display This Question:

If interventionist = Trump Hater

Display This Question:

If interventionist = Trump Lover

takeControlRisk What do you want to do?

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (make a free choice between the 2 options)

Page Break

Display This Question:
If takeControlRisk = Pay 10 cents to take back full control (make a free choice between the 2 options)

choiceRisk Which lottery do you choose?

- ○ Option A: Get $1 with 50% probability and $0 with 50% probability
- ○ Option B: Get $0.8 for sure

Display This Question:
If takeControlRisk = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

You get option A.

Page Break

What do you think about the motives of the {Trump hater, Trump lover} to make the restriction that was just imposed on you?

(The {Trump hater, Trump lover} forbade you to take $0.80 for sure. The alternative was a lottery where you could win $1 with a 50% chance and $0 with a 50% chance.)

intHarmsMeRisk, intProtectsMeRisk, intWantsPowerRisk Please let us know what you think:

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
The {Trump hater, Trump lover} made this restriction to **harm me**	○	○	○	○
The {Trump hater, Trump lover} made this restriction to **protect me** against bad decisions	○	○	○	○
The {Trump hater, Trump lover} made this restriction because he/she likes to **feel powerful**	○	○	○	○

Page Break

Display This Question:

If takeControlRisk = Pay 10 cents to take back full control (make a free choice between the 2 options)

reasonRisk1 The {Trump hater, Trump lover} forbade you to take option B (getting $0.80 for sure) and you decided to lift this choice restriction.

Why did you lift the choice restriction?

_____

Display This Question:

If takeControlRisk = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

reasonRisk2 The {Trump hater, Trump lover} forbade you to take option B (getting $0.80 for sure) and you decided to accept this choice restriction.

Why did you accept the choice restriction?

_____

Page Break

Display This Question:

If takeControlRisk = Pay 10 cents to take back full control (make a free choice between the 2 options)

motiveLiftingRisk_1-4 Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "risky lottery" stage).

Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose an option that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlRisk = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

motiveAcceptingRisk_1-4 Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "risky lottery" stage).

Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I liked the lottery best that was chosen for me/ It wasn't that important for me to get another lottery.	○	○	○	○
I liked it that somebody else made the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

- Stage 3/3 -

End of Block

Start of Block

In the following, you can make a choice between **two options:**

Here are your options:

-**Option A:** You get $0.30 right after this study

-**Option B:** You get $1 one month later

Page Break

The {Trump hater, Trump lover} who we introduced to you in the beginning has decided to forbid you to take option B (get $1 one month later):

Display This Question:

If interventionist = Trump Hater

Display This Question:

If interventionist = Trump Lover


I forbid you to take option B!
MAKE AMERICA GREAT AGAIN

takeControlTime What do you want to do?

- ○ **Accept the choice restriction** that the {Trump hater, Trump lover} imposed on you
- ○ Pay 10 cents to **take back full control** (make a free choice between the two options)

Page Break

Display This Question:

If takeControlTime = Pay 10 cents to take back full control (make a free choice between the two options)

choiceTime Which option do you choose?

- ○ **Option A:** Get $0.30 right after this study
- ○ **Option B:** Get $1 one month later

Display This Question:

If takeControlTime = Accept the choice restriction that the {Trump hater, Trump lover} imposed on you

You get option A.

Page Break

Q657
What do you think about the motives of the {Trump hater, Trump lover} to make the restriction that was just imposed on you?

(The {Trump hater, Trump lover} forbade you to take $1 one month later. The alternative was to take $0.30 right after the study.)

intHarmsMeTime, intProtectsMeTime, intWantsPowerTime Please let us know what you think:

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
The {Trump hater, Trump lover} made this restriction to **harm me**	○	○	○	○
The {Trump hater, Trump lover} made this restriction to **protect me** against bad decisions	○	○	○	○
The {Trump hater, Trump lover} made this restriction because he/she likes to **feel powerful**	○	○	○	○

Page Break

Display This Question:

If takeControlTime = 1

In one stage you had to **choose between receiving a low payment after the study ($0.30) or receiving a high payment ($1) one month later.**

The {Trump hater, Trump lover} forbade you take option B (receiving $1 one month later) and you decided to lift this choice restriction.

reasonTime1 Why did you lift the choice restriction?

_____

Display This Question:

If takeControlTime = 0

In one stage you had to **choose between receiving a low payment after the study ($0.30) or receiving a high payment ($1) one month later.**

The {Trump hater, Trump lover} forbade you take option B (receiving $1 one month later) and you decided to accept this choice restriction.

reasonTime2 Why did you accept the choice restriction?

_____

Page Break

Display This Question:

If takeControlTime = 1

Here are some additional reasons why you might have lifted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "money now or later" stage).

motiveLiftingTime_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
Lifting the restriction allowed me to choose a payment option that I liked better	○	○	○	○
I felt a general dislike that my freedom of choice was restricted in this setting.	○	○	○	○
I felt an even stronger dislike that a {Trump hater, Trump lover} restricted my freedom of choice	○	○	○	○
I felt a general dislike that the {Trump hater, Trump lover} had control in this setting	○	○	○	○

Display This Question:

If takeControlTime = 0

Here are some additional reasons why you might have accepted the restriction that the {Trump hater, Trump lover} imposed on you in this stage (the "money now or later" stage).

motiveAcceptingTime_1-4 Please indicate how relevant these reasons were for your decision:

	Very relevant	Relevant	Somewhat relevant	Not relevant
I liked the payment option best that was chosen for me/ It wasn't that important for me to get another payment option.	○	○	○	○
I liked it that somebody else made the decision for me	○	○	○	○
I liked it even better that a {Trump hater, Trump lover} made the decision for me	○	○	○	○
I liked it that a {Trump hater, Trump lover} had control in this setting	○	○	○	○

End of Block

Start of Block

Thank you for completing all 3 stages. Now, we have a few additional questions for you.

surprised Was it surprising to you that the {Trump hater, Trump lover} imposed these kind of restrictions on you?

- ○ Yes, it was surprising
- ○ No, it was not surprising

Page Break

restrictionsResonable How reasonable did you find the choice restrictions?

"1" means very unreasonable

"10" means very reasonable

	very unreasonable								very reasonable	
	1	2	3	4	5	6	7	8	9	10
Your rating										

restrictionsInconvenient How **inconvenient** did you find the choice restrictions?

"1" means very inconvenient

"10" means very convenient

	very inconvenient								very convenient	
	1	2	3	4	5	6	7	8	9	10
Your rating										

End of Block

Start of Block

imposeRestrictions Would you like to impose the same restrictions you faced on other future participants?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

End of Block

Start of Block

imposeRestrictionsOnTH Would you like to impose the same restrictions you faced on another future participant who **hates Trump**?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

imposeRestrictionsOnTL Would you like to impose the same restrictions you faced on another future participant who **loves Trump**?

Depending on some criteria, we might actually impose the restrictions you faced on other participants of this study - should you indicate "Yes" below.

- ○ Yes
- ○ No

End of Block

Start of Block

gender What is your gender?

- ○ Male
- ○ Female
- ○ Other

age How old are you (in years)?

▼ 18 ... 99

race Please tell us which racial category you identify with:

- ○ White
- ○ Black or African American
- ○ Asian
- ○ Hispanic or Latino
- ○ Other
- ○ None

education What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ More than master's degree

---

voter Did you vote in the 2020 US Presidential Election?

- ○ Yes
- ○ No

attentioncheck_1-4 Please indicate how strongly you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It is important to me how others think about me	○	○	○	○	○
I believe that society is based on rules and everyone must follow the rules	○	○	○	○	○
It is important to pay attention in this study. Please click "Strongly agree"	○	○	○	○	○
It is important to be kind to others, even strangers	○	○	○	○	○

End of Block

Start of Block

feedback Thank you very much for your effort!

Do you have any feedback for us? Was anything unclear?

Please click on the button below to proceed to Prolific!

End of Block

Chapter 2

Overcoming Polarization through Simple Conciliatory Messages

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Abstract

Political polarization has prevented cooperation and spurred hate and sometimes violence between political factions in the U.S. and other countries. Here I test experimentally whether two simple, conciliatory messages can improve relations between Democrats and Republicans in the U.S.: i) Acknowledging that the other side has good intentions and ii) sharing blame for hate and polarization. I find that subjects have better attitudes (in terms of altruism, trust, closeness perceptions, and openness to friendship) towards outgroup members who support one of the conciliatory messages than to outgroup members who don't, even though I hold outgroup members' policy views constant in the experimental design. However, subjects have worse attitudes towards ingroup members who support a conciliatory message than towards ingroup members who don't. I present evidence regarding potential mechanisms. Beliefs about how altruistic ingroup and outgroup members would behave towards the subject follow the same pattern as attitudes. Thus, the messages signal changes in benevolence. Outgroup members who support a message are perceived to be more benevolent and ingroup member who support a message are perceived to be less benevolent.

I thank Andreas Glöckner, Max Grossmann, Sören Harrs, Bettina Rockenbach, and Matthias Sutter for valuable comments. Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany´s Excellence Strategy – EXC 2126/1– 390838866. The research described in this article was approved by the University of Cologne Ethical Review Committee for Research in Social and Behavioral Sciences of the Faculty of Management, Economics and Social Sciences. The experiment was pre-registered at AsPredicted# 117011 (https://aspredicted.org/Q42_3F6). Email: reinhardt@wiso.uni-koeln.de.

1 Introduction

Political polarization has undermined trust, altruism, and the willingness to cooperate across political fractions in the United States and other countries in the recent years (e.g., Boxell et al., 2022, Dimant, 2023, Finkel et al., 2020). While different opinions about policy (often referred to as *ideological polarization*) are not necessarily harmful and an integral part of democracy, rising levels of hostilities, hate and disrespect (often referred to as *partisan animosity*) complicate open and respectful political dialogue in the service of the shared pursuit of making the country better off (e.g., Frimer et al., 2017, Graham and Svolik, 2020, Iyengar and Westwood, 2015).

How to tackle partisan animosity and especially how to communicate in order to generate a climate in which diverse ideas and opinions can be discussed in a respectful manner is a complex question to which the best answer — or the set of best answers — has not been found yet (Hartman et al., 2022). Many established strategies to foster shared identities and to mitigate internal conflicts like focusing on external enemies (Gehring, 2022), creating shared experiences (Depetris-Chauvin et al., 2020), employing narratives of shared history (Miguel, 2004), fostering positive forms of intergroup contact (Bagues and Roth, 2023, Bazzi et al., 2019, Lowe, 2021), or role-modeling of warm relations by politicians (Huddy and Yair, 2021) require a lot of effort, certain external conditions, or possibly the cooperation of the other side. In this paper I test whether two easily implementable and scalable communicative strategies are effective at improving attitudes between Democrats and Republicans in a US setting: i) acknowledging good intentions of the other side and ii) sharing blame for hate and polarization. In the public debate in the US, imputing malicious intentions and assigning blame to each other are frequently used strategies that generate hostilities.[1] I selected the messages above because they might signal the absence of hostility towards the other side.

In order to test the effectiveness of both messages to improve relationships between Democrats and Republicans, I ran an online experiment on Prolific. My sample consists of US citizens who either support the Democrats or the Republicans. In the experiment, I match each subject to 4 other participants. The first two matched

[1]For instance, Michelle Obama's catchphrase "When they go low, we go high" can be seen as an "us vs them" message that imputes bad intentions to the other side while highlighting the moral superiority of the own group. Source: CNBC, https://www.cnbc.com/2020/02/12/michelle-obama-on-famous-catchphrase-when-they-go-low-we-go-high.html. [Accessed 8 March, 2023].

persons that are shown to the subject are a supporter of the Republicans and a supporter of the Democrats who appear in random order. Then, the subject is exposed to two additional persons. One of them favors the Republican party, while another favors the Democratic Party and the subject is informed that both persons support a political message. One message claims that most people on both sides want the best for the country and just disagree about the best way to achieve it ("Acknowledging Good Intentions"). The other message claims that both groups have contributed to hate and polarization in the US ("Sharing Blame").[2] I randomize the assignment of messages such that some subjects will see a Democrat supporting the Good Intentions message and a Republican supporting the Sharing Blame message and vice versa. The subject is informed that all 4 persons support most policy views of their favored party in order to avoid that inference about policy views shapes the results.

For each of the 4 matched persons, I elicit beliefs how much the respective person might give to the subject in a dictator game with $1 endowment if the person would know the favored party of the subject. Moreover, I elicit i) how much the subject gives to the person in a dictator game with $1 endowment, ii) trust, iii) whether the subject could imagine becoming friends with the person and iv) closeness perceptions. As pre-registered, I combine these 4 behavioral and perceptional measures into an index that captures overall attitudes towards the person which serves as the main outcome variable in the analysis. In the following I refer to the two persons who are presented to the subject without any message as "control" conditions and to the two persons who support a message as "message" conditions.

I find that there is a huge difference in attitudes towards ingroup members (same favored party) and outgroup members (opposed favored party) in the control conditions which is not surprising and well in line with the literature (see e.g., Dimant, 2023). Moreover, subjects have better attitudes towards outgroup members who support a conciliatory message than towards outgroup members in the control condition which shows that supporting the messages improves relations with the outgroup. However, subjects have worse attitudes towards ingroup members who support a conciliatory message than towards ingroup members in the control condition. This result might be seen as evidence that political polarization is so strong in the US that people do not have incentives to seek conciliation with the outgroup because they get punished by their ingroup for it which might generate a vicious cy-

[2] I elicit support for the messages in the end of the survey such that I can match participants to each other without deception.

cle where people refrain from conciliation which further increases polarization which makes incentives to refrain from conciliation even stronger.

The results described above hold for both messages. The results also hold for all 4 dimensions of the attitudes-index: altruism, trust, openness to friendship and closeness perceptions. Moreover, the results hold for subjects who identity very strongly with their favored party which supports the conclusion that the tested messages are effective at improving relations with strong identifiers.

In order to shed light on mechanisms, I tested whether the messages affect subjects' beliefs how the shown persons would behave in a dictator game towards the subject knowing the subject's political affiliation. Beliefs about dictator game behavior closely map the patterns I observed for the attitude index: Subjects believe that ingroup members in the control conditions would behave more altruistically towards them than outgroup members in the control condition. Subjects also believe that outgroup members who support a conciliatory message behave more altruistically towards them than outgroup members who don't support a conciliatory message. Moreover, subjects believe that ingroup members who support a conciliatory message behave less altruistically towards them than ingroup members who don't support a conciliatory message. Beliefs how the shown persons would behave in a dictator game and attitudes towards that person also correlate strongly (with correlations ranging between 0.628 and 0.708). These results suggest that beliefs in the altruism of the shown persons towards the subject are a relevant channel. Subjects might perceive the support of a conciliatory message by an outgroup member as a signal of the absence of hostility and the support of a conciliatory message by an ingroup member as a signal of diminished ingroup solidarity.

Comparing the effectiveness of the two messages yields the following results. Subjects have significantly better attitudes towards outgroup members who support the "Good Intentions" message than towards outgroup members who support the "Sharing Blame" message. There is no significant difference between attitudes towards ingroup members who support one or the other message. Therefore, the "Good Intention message is more effective at improving relations to the outgroup without imposing the "cost" of of stronger punishment by the ingroup.

The two tested messages are easily implementable and scalable tools that can easily be used in a huge variety of real world situations for instance on social media or in

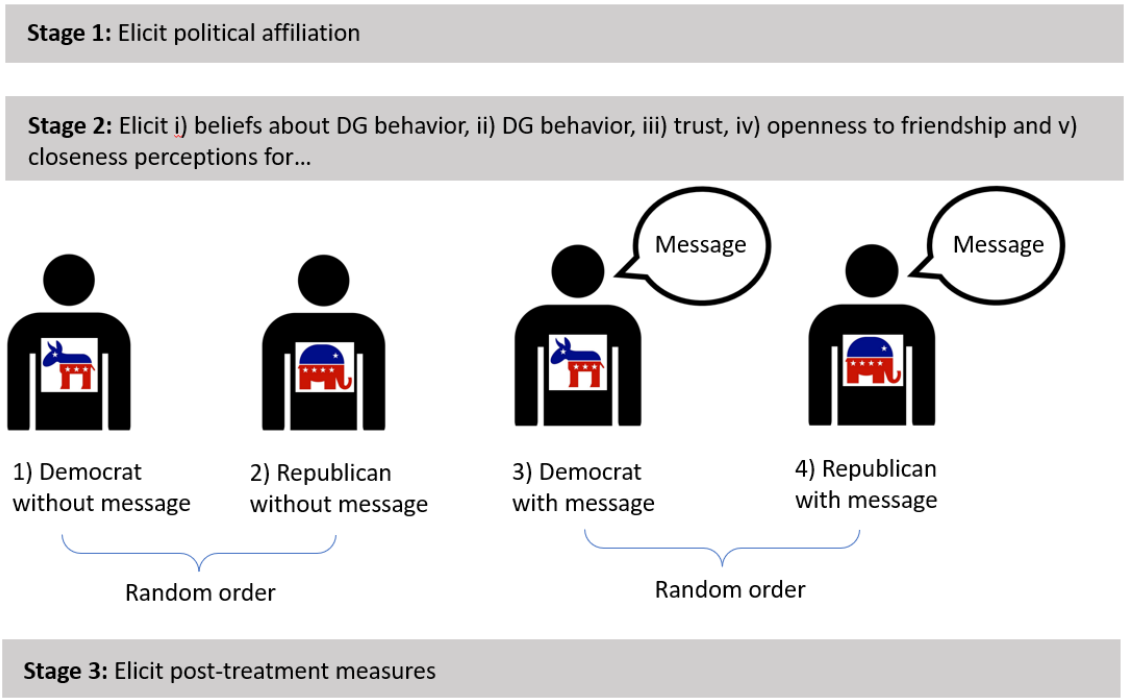
the dialogue with friends, relatives, or coworkers who support the other side. Both messages might contribute to creating a respectful atmosphere that facilitates a respectful discussion about policy views.

Section 2 introduces the experimental design. Section 3 presents the data and section 4 the pre-registered hypothesis. Finally, section 5 presents the results, while section 6 concludes.

2 Experimental Design

In the following I describe the experimental procedure in chronological order. Figure 1 gives an overview over the design.

Figure 1: The Experimental Design



Stage 1: I elicit the political affiliation and ask subjects to state their opinion about the Democrats and the Republicans in a few sentences. The subject is informed that she will be presented with 4 other participants in the course of the study and that for each person, she has to split $1 between herself and the respective person. Moreover, the subject is informed that one of the 4 persons is randomly drawn and that

the respective split gets payed out as a bonus to her and the respective person.

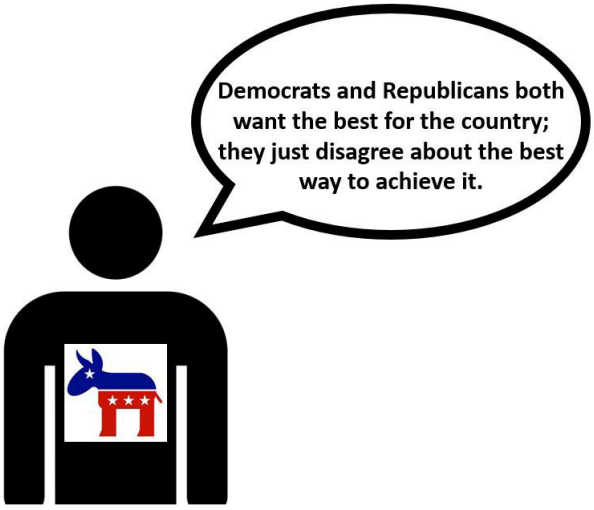
Stage 2: The first two persons that are presented to the subject in random order are a person who favors the Democrats and a person who favors the Republicans. The subject is informed that both persons support most policy views of the respective party. The next two persons that are presented to the subject in random order are a person who favors the Democrats and a person who favors the Republicans who also support most policy views of the respective party. However, persons 3 and 4 also support a political message. One message claims that both groups have good intentions and the other message claims that both groups share the blame for hate and polarization. The allocation of both messages to the Democrat and the Republican is randomized such that subjects see each message once. The wording of the messages is the following:

Good Intentions: *"Democrats and Republicans both want the best for the country; they just disagree about the best way to achieve it."*

Sharing Blame: *"Democrats and Republicans have both contributed to hate and polarization in this country."*

The 4 presented persons are visualized with avatars with party symbols. The messages of persons 3 and 4 are visualized by using speech bubbles. Figure 2 gives an example.

Figure 2: Visualization Example: A Democrat who supports the "Good Intentions" message



For each of the 4 presented persons, I elicit beliefs how the respective person would split $1 with the subject if he or she would be aware of the subject's favored party. Moreover, I elicit i) how the subject would split $1 between herself and the person, ii) how strongly the subject trusts the person, iii) whether the subject could imagine becoming friends with the person and iv) how close the subjects feels towards the person.

Stage 3: After eliciting beliefs and attitudes about the 4 persons, I show the subject 4 political messages and ask them whether they agree or disagree with these messages. Two of the messages are the ones presented above. The additional two messages mirror the conciliatory messages and i) assign blame to the other party and ii) impute malicious intentions to the other party. I also elicit demographics, the strength of identification with the favored party of the subject, and how much she supports most policy views of her favored party. This information allows me to match subjects to each other as described above without deception.

3 Data

I conducted the experiment on Prolific. After the pre-registered procedure of excluding subjects who failed the attention check, I end up with a sample size of 479 subjects including 240 Democrats and 239 Republicans.

I code beliefs how much each of the 4 matched persons would give to the subject in a dictator game in cents from 0 to 100. Moreover, I code subjects' dictator game givings to each person from 0 to 100, trust to each person from 0 (no trust at all) to 100 (trust completely), perceptions whether the subject could imagine to become a friend of the person from 0 (could not become a friend) to 100 (could become a friend) and closeness perceptions from 1 (Not close at all) to 7 (Very close) due to the conventional set of answers on the IOS scale (see Gächter et al. (2015) and Aron et al. (1992)).

As pre-registered, I normalize the 4 main outcome variables (altruism, trust, openness to friendship and closeness) such that I obtain a variable ranging from 0 (most unfavorable behavior or attitude) to 1 (most favorable behavior or attitude) for each category. Then, I compute the average of these 4 variables to get an index that measures general attitudes to the respective person. This index is used as the main outcome variable in the analysis and is called **"Attitude"**.

In order to facilitate comparisons, I also normalize beliefs about behavior of the person in a dictator game played with the subject. Thus, the variable **"Beliefs"** is coded from 0 (the subject believes that the person will not give her anything) to 1 (the subject believes that the person will give her \$1).

4 Hypotheses

I pre-registered 3 main hypotheses:

H1: Subjects have better attitudes towards ingroup members who don't support a message than towards outgroup members who don't support a message.

H2: Subjects have better attitudes towards outgroup members who support a conciliatory message than towards outgroup members who don't support a message.

H3: Subjects have worse attitudes towards ingroup members who support a conciliatory message than towards ingroup members who don't support a message.

H1 is just a measure of ingroup bias and in line with previous literature (see e.g., Dimant, 2023). H2 is motivated by the notion that the messages might signal the

absence of hostility towards the other party which might result in better overall attitudes. H3 is motivated by the notion that the absence of hostility towards the outgroup might be seen as a lack of ingroup solidarity or a violation of group norms resulting in deteriorating attitudes towards ingroup members who support a message.

5 Results

5.1 Descriptives

Our final sample has a size of 479 consisting of 240 Democrats and 239 Republicans. 50% of the sample are female and 50% are male. 62% of subjects have a university degree, the median annual income is $40,000 - $49,999, and the mean age is 44. 49% identify with their favored party strongly or very strongly and 51% moderately or weakly. 59% of subjects support most policy views of their party strongly or very strongly and 41% subjects support most policy views of their party moderately or weakly. Thus, while the sample is not strictly representative, it seems to resemble the US population reasonably well with regards to the attributes above.

5.2 Main Effects

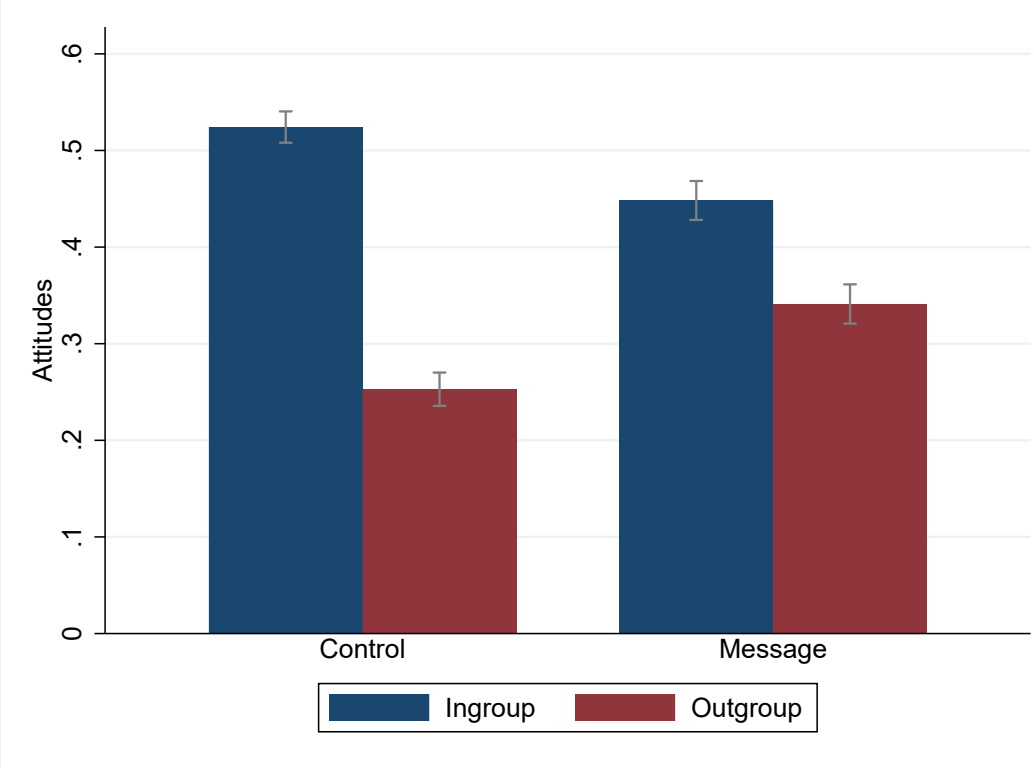
Figure 3 presents attitudes towards ingroup members and outgroup members, with conciliatory messages ("Message" conditions) and without ("Control" conditions). Both messages generate similar effects and results 1-3 below hold for both messages, thus I often group them together in the following (see section 5.6 for a comparison of both messages).

Result 1: *Subjects have better attitudes towards ingroup members who don't support a message than towards outgroup members who don't support a message (two-tailed t-test, $p<0.001$).*[3]

Subjects have clear ingroup bias in the control conditions which is not surprising and well in line with previous literature (see e.g., Dimant, 2023).

[3]Results 1-3 which test the pre-registered hypotheses are also significant with all three $p<0.001$ when using Wilcoxon matched-pairs signed-rank tests.

Figure 3: Attitudes towards ingroup and outgroup members, with and without conciliatory message



Result 2: *Subjects have better attitudes towards outgroup members who support a conciliatory message than towards outgroup members who don't support a conciliatory message (two-tailed t-test, $p<0.001$).*

Result 2 implies that supporting a conciliatory message improves attitudes of outgroup members towards the person who supported the message. Note that I informed subjects that each person who was presented to them supports most policy views of his or her favored political party. Thus, voicing conciliatory messages improves the relation to the outgroup although it is clear that different policy views still exist. Therefore, result 2 can be seen as evidence that differences in policy views are no inevitable obstacle to improving relationships between both groups.

Result 3: *Subjects have worse attitudes towards ingroup members who support a conciliatory message than towards ingroup members who don't support a message (two-tailed t-test, $p<0.001$).*

Supporting a conciliatory message comes at the cost that fellow ingroup members have worse attitudes towards the person who supported the message. The conciliatory message might signal the absence of hostility towards the outgroup which might be seen as a lack of ingroup solidarity or violating group norms. Section 5.5 further discusses mechanisms. Result 3 implies that people have an incentive to refrain from using conciliatory rhetoric if they want to avoid deteriorating attitudes of fellow ingroup members towards them. Result 3 also illustrates a vicious cycle of polarization in which polarization so strong that people don't have incentives to support conciliatory messages which might increase polarization.

5.3 Component Analysis

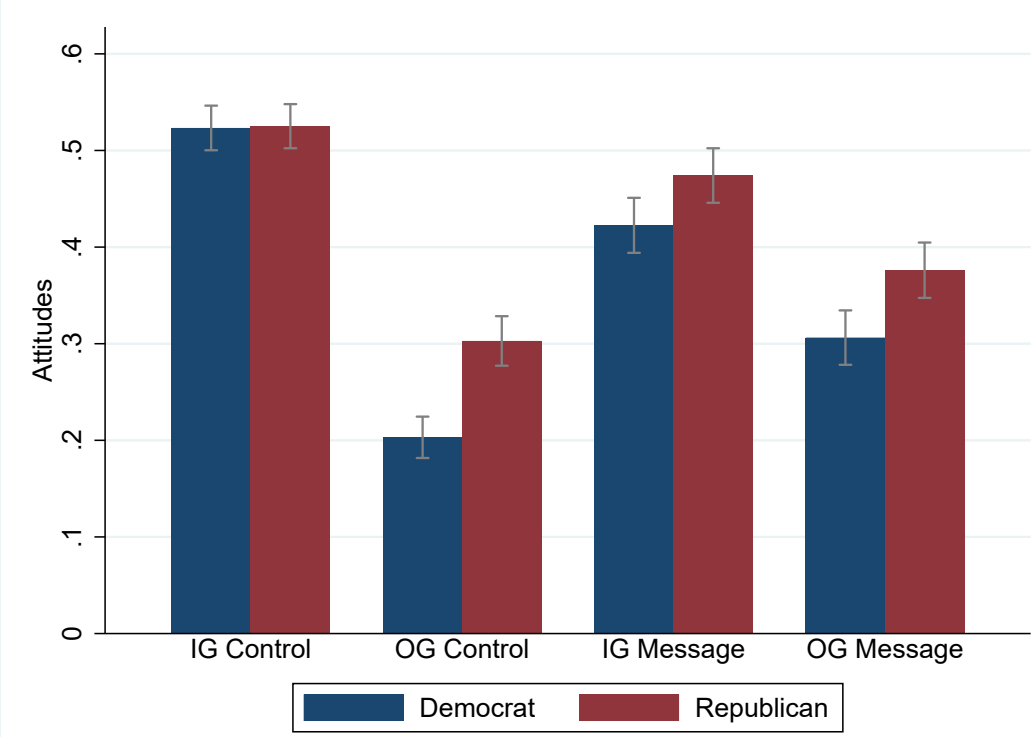
Result 4: *Results 1-3 hold for a wide variety of behavioral and affective dimensions.*

Results 1-3 also hold for each of the 4 components of the "Attitude" index: altruism, trust, openness to friendship and closeness perceptions (see figure 8 in the Appendix). All two-tailed t-tests have a $p<0.001$. Moreover, the 4 components are highly correlated (see table 3 in the Appendix).

5.4 Party Differences

Figure 4 breaks down attitudes towards ingroup and outgroup members with or without a message by party preferences of the subject. In the control conditions, Democrats and Republicans have very similar attitudes to ingroup members (OLS with robust SE, see Appendix table 5, diff<0.01, $p=0.912$). However, Democrats have worse attitudes towards outgroup members in the control conditions than Republicans (OLS with robust SE, diff$=0.10$, $p<0.001$). Democrats also have worth attitudes towards ingroup members (OLS with robust SE, diff$=0.05$, $p=0.012$) and outgroup members (OLS with robust SE, diff$=0.07$, $p=0.001$) who support conciliatory messages than Republicans. Hence, Democrats punish ingroup members more strongly for supporting conciliatory messages.

Figure 4: Attitudes towards ingroup and outgroup member with and without message by party preferences of the subject

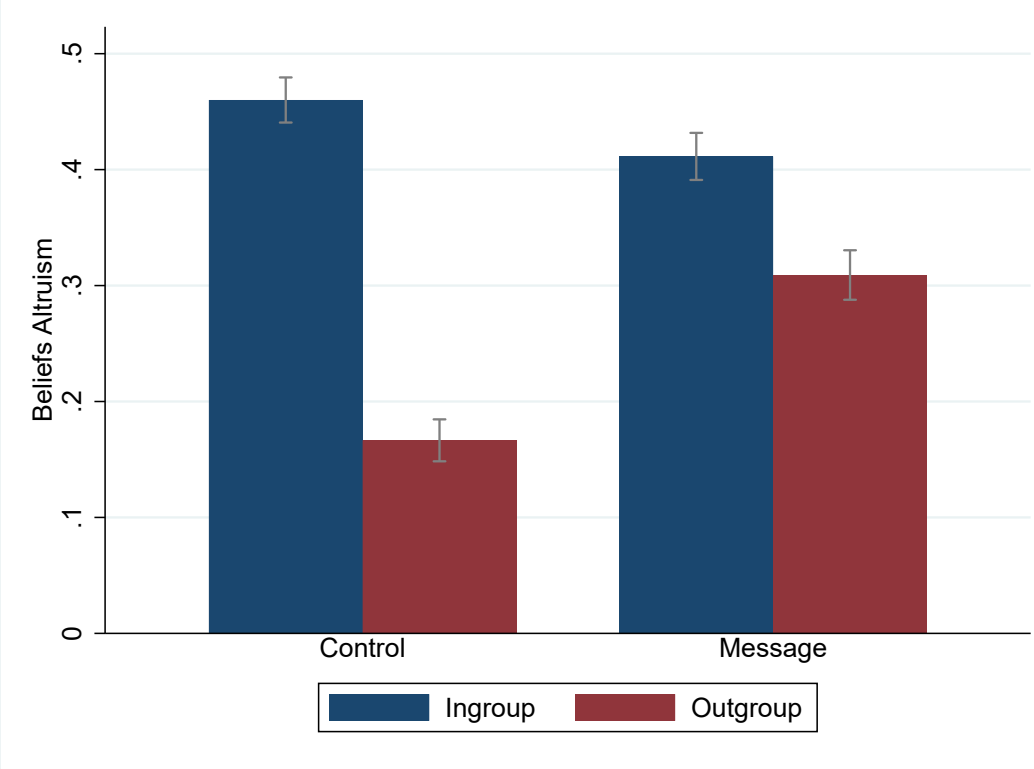


5.5 Beliefs about Dictator Game Behavior of the Presented Persons

Result 5: *Beliefs about the dictator game behavior of the presented persons follow the same pattern as the attitudes toward these persons. Beliefs and attitudes correlate strongly.*

Figure 5 present beliefs how much the 4 presented persons would give to the subject knowing her party preferences. The pattern of attitudes and beliefs are similar and results 1-3 also hold for beliefs: Subjects believe that ingroup members give them more than outgroup members in the control conditions (two-tailed t-test, $p<0.001$). Moreover, subjects believe that ingroup members in the message condition give them less than ingroup members in the control condition (two-tailed t-test, $p<0.001$). Subjects also believe that outgroup member in the message condition give them more than outgroup member in the control condition (two-tailed t-test, $p<0.001$).

Figure 5: Beliefs about behavior of presented persons



Furthermore, beliefs how much a person would share with the subject in a dictator game and attitudes of the subject towards that person strongly correlate. Table 4 in the Appendix presents correlations for all 4 conditions. All 4 correlations are significant at the 1% level and range from 0.628 to 0.708.

These findings support the notion that the messages signal the absence of hostility towards the other group which improves relations across party lines but deteriorates relations with fellow ingroup members who might perceive the absence of hostility as a lack of ingroup solidarity or a violation of group norms.

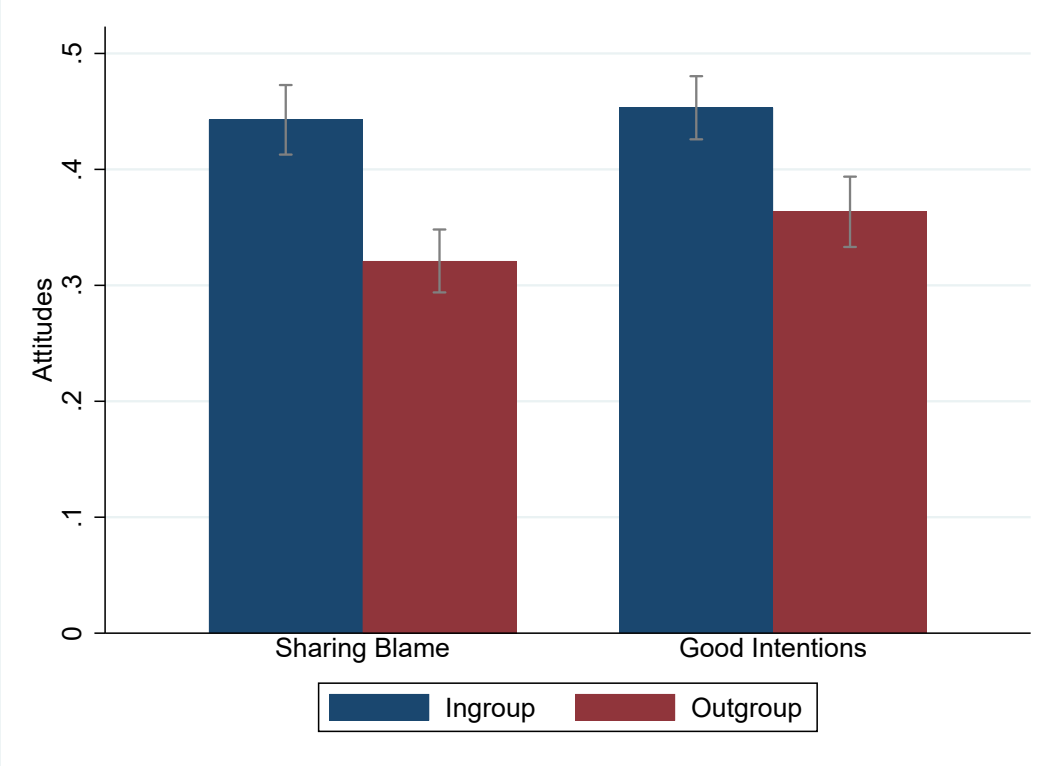
5.6 Comparison of messages

Result 6: *The "Good Intentions" message is more effective than the "Sharing Blame" message at improving relations with outgroup members without imposing the cost of stronger punishment by ingroup members.*

Figure 6 presents attitudes towards ingroup and outgroup members who support the "Sharing Blame" message and the "Good Intentions" message. Results 1-3 still

hold for both messages separately (two-sided t-tests, all p-values <0.001). However, subjects have better attitudes towards ingroup members who support the "Good Intentions" message than towards ingroup members who support the "Sharing Blame" message, albeit not significantly better (p=0.614). Moreover, subjects have significantly better attitudes towards outgroup members who support the "Good Intentions" message than towards outgroup members who support the "Sharing Blame" message (p=0.041).

Figure 6: Comparison of messages

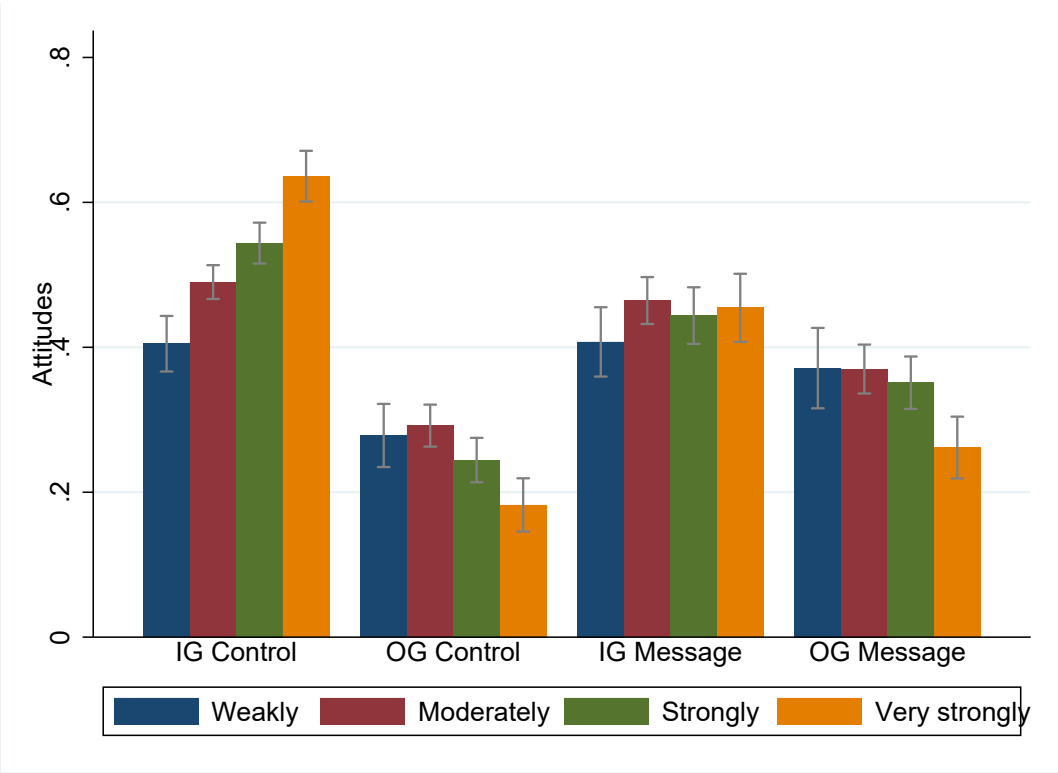


5.7 Strength of Identification

Result 7: *Even subjects who identify with their favored party very strongly have better attitudes towards outgroup members who support a conciliatory message than to outgroup members in the control condition.*

Figure 7 presents attitudes by the subject's strength of identification with her favored party. Subjects who identify very strongly with their favored party have significantly better attitudes towards outgroup members who support a conciliatory message than towards outgroup members who don't support a message (p<0.001).

Figure 7: Attitudes by Strength of Identification with Favored Party



Attitudes towards the ingroup control person increase in the strength of identification while attitudes towards the outgroup control person decrease in the strength of identification (see columns 1 and 2 of table 1) which is not surprising. There is no significant effect of the strength of identification on attitudes towards ingroup members who support a conciliatory message though (column 3, table 1). Subjects punish ingroup members for supporting the conciliatory message and the level of punishment defined as the difference in attitudes between control and message condition increases in the strength of subject's identification with her favored party (see column 1, table 2). It seems that more positive attitudes of strong identifiers towards ingroup members are compensated by the stronger punishment strong identifiers impose on ingroup members for supporting a conciliatory message. Attitudes towards outgroup members who support a conciliatory message decrease in the strength of subjects' identification (column 4, table 1). The boost in attitudes towards outgroup members who support a conciliatory message is not significantly affected by the strength of identification (see column 2, table 2).

Table 1: Effects of the Strength of Identification on Attitudes

	(1) IngroupCon	(2) OutgroupCon	(3) IngroupMes	(4) OutgroupMes
StrengthIdentification	0.0736***	-0.0378***	0.00770	-0.0375***
	(0.000)	(0.000)	(0.464)	(0.000)
_cons	0.336***	0.350***	0.429***	0.437***
	(0.000)	(0.000)	(0.000)	(0.000)
N	479	479	479	479
r2	0.163	0.0380	0.00116	0.0270
r2_a	0.161	0.0360	-0.000938	0.0250

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "IngroupCon" and "OutgroupCon" denote attitudes to ingroup and outgroup members in the control conditions. "IngroupMes" and "OutgroupMes" denote attitudes to ingroup and outgroup members in the message conditions. "StrengthIdentification" is coded from 1 (weak identification) to 4 (very strong identification).

Table 2: Effects of the Strength of Identification on Effects of Supporting a Conciliatory Message

	(1) EffectOnIG	(2) EffectOnOG
StrengthIdentification	-0.0659***	0.000277
	(0.000)	(0.972)
_cons	0.0930***	0.0875***
	(0.000)	(0.000)
N	479	479
r2	0.111	0.00000300
r2_a	0.109	-0.00209

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "EffectOnIG" is the difference between the attitude towards an ingroup member who supports a conciliatory message and an ingroup member in the control condition. "EffectOnOG" denotes the same difference for outgroup members. "StrengthIdentification" is coded from 1 (weak identification) to 4 (very strong identification).

5.8 Agreement with Messages

With regards to the agreement with the two messages, 51% of subjects agree or strongly agree with the Good Intentions message while 49% disagree or strongly disagree with the Good Intentions message. Moreover, 68% of subjects agree or strongly agree with the Sharing Blame message while 32% disagree or strongly disagree with the Sharing Blame message (see Appendix table 7).[4] Agreement with the two messages is significantly correlated (p<0.001, see Appendix table 8).

Subjects' agreement with the Good Intentions message and the Sharing Blame message decreases in the strength with which they identify with their favored party (see Appendix table 9). Furthermore, attitudes towards outgroup members in the control condition, ingroup members who support a conciliatory message, and outgroup members who support a conciliatory message increase in subjects' own support of the two conciliatory messages (see table 10). There is no effect on attitudes to-

[4] I measured agreement with the messages at the end of the experiment, so exposure towards the four shown persons in the experiment could have affected agreement levels.

wards ingroup members in the control condition. Moreover, subjects who support conciliatory messages themselves, punish fellow ingroup members less strongly for supporting it (see table 11). Subjects who agree with both conciliatory messages strongly (highest score) have even better attitudes towards ingroup members in the message condition than towards ingroup members in the control condition ($p<0.001$, two-tailed t-test). Subjects who support conciliatory messages themselves also reward outgroup members more strongly for supporting a conciliatory message.

6 Discussion

In this study, I presented evidence that two simple, conciliatory messages can improve relations between Democrats and Republicans in the US: i) Acknowledging that the other side has good intentions and ii) sharing blame for hate and polarization. These messages are easily implementable in a variety of situations, e.g., on social media, in discussions with friends, coworkers and family members who support the other side, or in political speeches. Both messages might perhaps be more promising to improve relations with members of the other side than attempts to convince them that the own side or its policy solutions (e.g., stances on abortion, gun control or Covid) are morally superior (see also Kubin et al. (2021)).

One limitation of the study is that it does not test the effect of exposure to messages and opinions of ingroup and outgroup members per se. Future work might test whether exposure to messages and opinions of ingroup and outgroup members about neutral topics also shapes attitudes, although it might be challenging to find purely neutral topics that do not generate other effects (e.g., by creating minimal groups along tastes concerning trivial topics). Moreover, future research might test whether the messages I propose are still effective in more realistic settings and whether they work if prominent politicians use them. It would also be interesting to test whether the messages generate spillover effects in the sense that exposure to an outgroup member who supports a conciliatory message improves attitudes towards other outgroup members. However, even if these spillover effects are limited, real life exposure to many outgroup members who support conciliatory messages might lead people to update their beliefs about the share of hostile and non-hostile outgroup members and thus their relation to the outgroup as a whole.

Moreover, future research might test whether other messages are even more effective in improving relations between Republicans and Democrats in the US and at

the same time don't lead to punishment from one's own side (perhaps by using a megastudy approach in the spirit of Milkman et al. (2021)). The most effective way to communicate in order to improve these relations likely hasn't been found yet and perhaps there exist other messages which are more effective than the ones I tested. Moreover, future research might test whether the messages I propose or other messages also work in other countries and contexts where political polarization has harmful consequences for society. The experimental method I propose might also be used to test which messages are most effective to contribute to reconciliation in conflicts along ethnic or religious lines or in societies that have experienced civil war.

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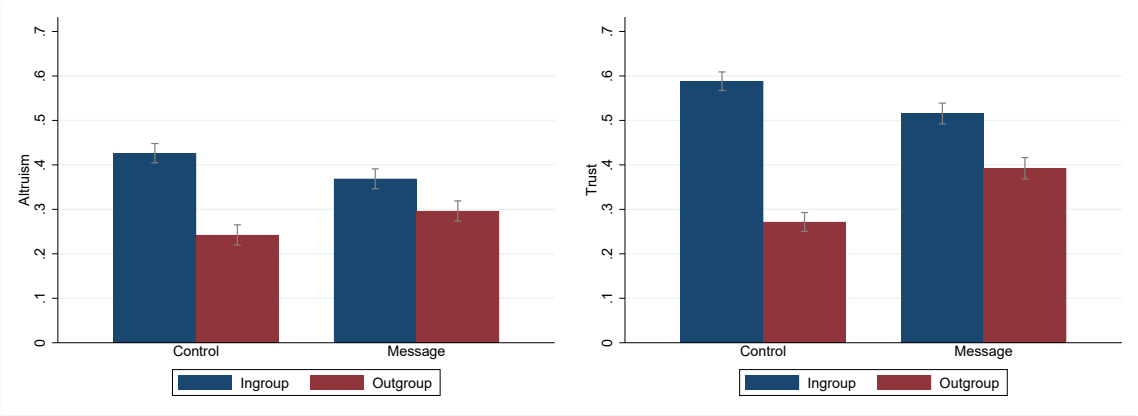
Appendix

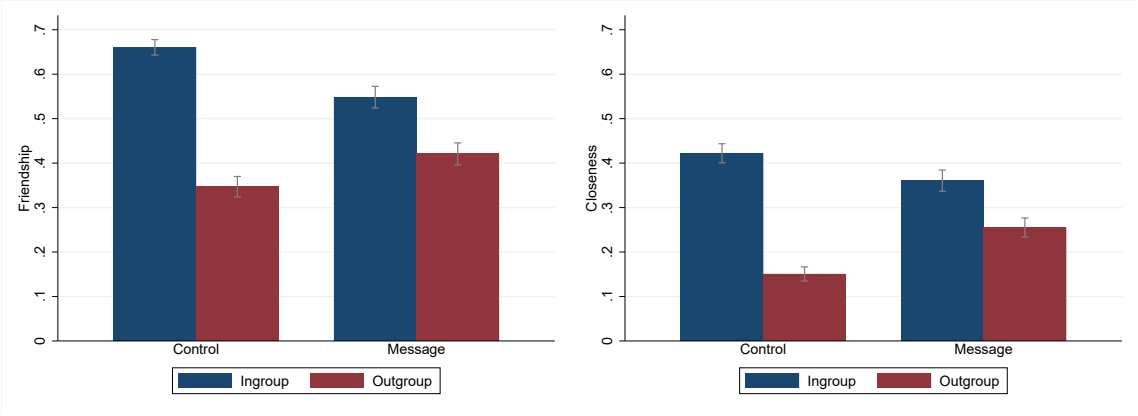
A Component Analysis

Figure 8: Effects on each component



(a) Altruism / Dictator Game

(b) Trust



(c) Openness to Friendship

(d) Closeness Perceptions / IOS

Table 3: Correlations between components i) altruism/dictator game; ii) trust, iii) friendship and iv) closeness/IOS across conditions

A) Ingroup Control

	IGConDG	IGConTrust	IGConFriends	IGConIOS
IGConDG	1			
IGConTrust	0.449***	1		
IGConFriends	0.407***	0.684***	1	
IGConIOS	0.369***	0.587***	0.588***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

B) Outgroup Control

	OGConDG	OGConTrust	OGConFriends	OGConIOS
OGConDG	1			
OGConTrust	0.597***	1		
OGConFriends	0.509***	0.751***	1	
OGConIOS	0.456***	0.579***	0.619***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

C) Ingroup Message

	IGMesDG	IGMesTrust	IGMesFriends	IGMesIOS
IGMesDG	1			
IGMesTrust	0.575***	1		
IGMesFriends	0.536***	0.861***	1	
IGMesIOS	0.485***	0.709***	0.700***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

D) Outgroup Message

	OGMesDG	OGMesTrust	OGMesFriends	OGMesIOS
OGMesDG	1			
OGMesTrust	0.639***	1		
OGMesFriends	0.592***	0.887***	1	
OGMesIOS	0.521***	0.715***	0.714***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

B Beliefs

Table 4: Correlations between attitudes and beliefs across conditions

A) Ingroup Control

	IngroupCon	IGConBel
IngroupCon	1	
IGConBel	0.628***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

B) Outgroup Control

	OutgroupCon	OGConBel
OutgroupCon	1	
OGConBel	0.676***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

C) Ingroup Message

	IngroupMes	IGMesBel
IngroupMes	1	
IGMesBel	0.642***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

D) Outgroup Message

	OutgroupMes	OGMesBel
OutgroupMes	1	
OGMesBel	0.708***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: "IngroupCon", "OutgroupCon", "IngroupMes", and "OutgroupCon" denote attitudes in the four conditions. "IGConBel", "OGConBel", "IGMesBel", and "OGMesBel" denote beliefs in the four conditions.

C Party Differences

Table 5: Party Differences in attitudes towards the 4 shown persons

	(1) IngroupCon	(2) OutgroupCon	(3) IngroupMes	(4) OutgroupMes
Democrat	-0.00182	-0.0998***	-0.0516**	-0.0697***
	(0.912)	(0.000)	(0.012)	(0.001)
_cons	0.525***	0.303***	0.474***	0.376***
	(0.000)	(0.000)	(0.000)	(0.000)
N	479	479	479	479
r2	0.0000254	0.0672	0.0132	0.0237
r2_a	-0.00207	0.0653	0.0111	0.0217

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "IngroupCon", "Democrat" is a dummy that takes the value of 1 if the subject supports the Democrats.

D Comparison of Messages

Table 6: Differences between messages

	(1) IngroupMes	(2) OutgroupMes
IGGoodIntentions	0.0104	
	(0.614)	
OGGoodIntentions		0.0424**
		(0.041)
_cons	0.443***	0.321***
	(0.000)	(0.000)
N	479	479
r2	0.000535	0.00874
r2_a	-0.00156	0.00666

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "IGGoodIntentions" is a dummy that takes the value of 1 if the subject was confronted with an ingroup member who supported the good intentions message. "OGGoodIntentions" is equivalently defined. "IngroupMes" and "OutgroupMes" denote attitudes to the ingroup member who supports a message and the outgroup member who supports a message.

E Agreement with Messages

Table 7: Agreement with conciliatory messages

(a) **Good Intentions:** "Democrats and Republicans both want the best for the country; they just disagree about the best way to achieve it."

	Frequency	Percent	Cum.
Strongly disagree	63	13.15	13.15
Disagree	171	35.70	48.85
Agree	161	33.61	82.46
Strongly agree	84	17.54	100.00
Total	479	100.00	

(b) **Sharing Blame:** "Democrats and Republicans have both contributed to hate and polarization in this country."

	Frequency	Percent	Cum.
Strongly disagree	35	7.31	7.31
Disagree	116	24.22	31.52
Agree	229	47.81	79.33
Strongly agree	99	20.67	100.00
Total	479	100.00	

Table 8: Correlations between agreement with messages

	GoodIntentions	SharingBlame
GoodIntentions	1	
SharingBlame	0.356***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Effect of identification with favored party on agreement with messages

	(1) GoodIntentions	(2) SharingBlame
StrengthIdentification	-0.159***	-0.299***
	(0.000)	(0.000)
_cons	2.963***	3.584***
	(0.000)	(0.000)
N	479	479
r2	0.0289	0.124
r2_a	0.0268	0.122

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The strength of identification with the favored party is coded from 1 (weakly) to 4 (very strongly). Agreement with a message is coded from 1 (Strongly disagree) to 4 (Strongly agree).

Table 10: Effect of support for conciliatory messages on attitudes

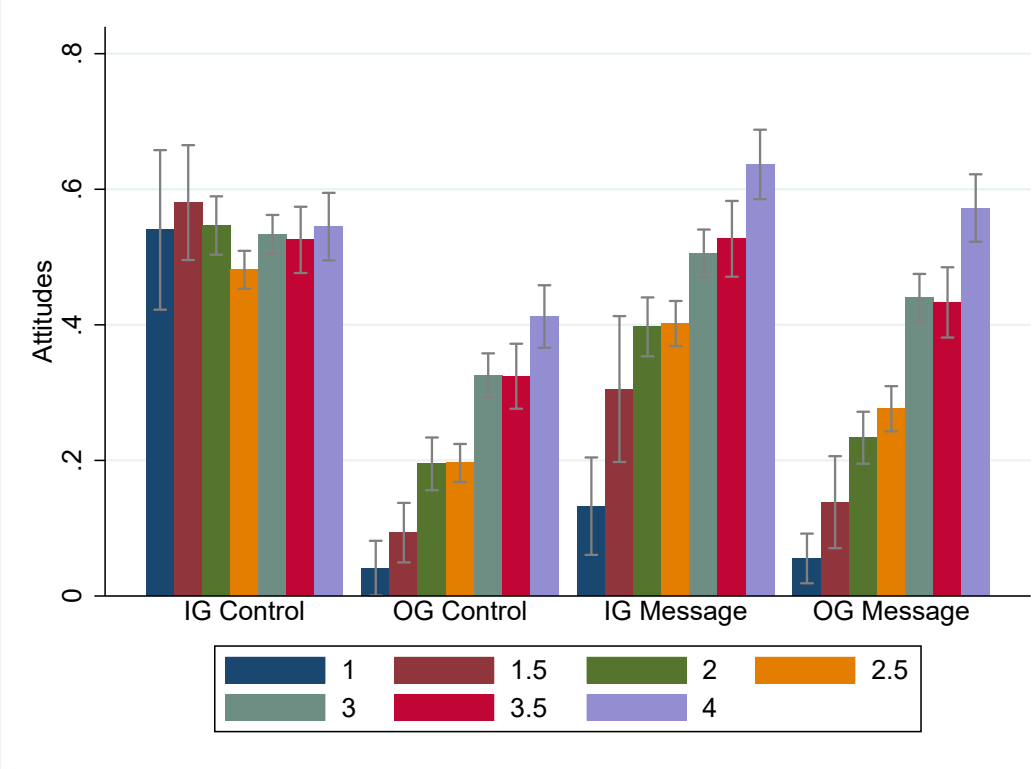
	(1) IngroupCon	(2) OutgroupCon	(3) IngroupMes	(4) OutgroupMes
SupportConciliatoryMessages	-0.00303	0.122***	0.136***	0.172***
	(0.811)	(0.000)	(0.000)	(0.000)
_cons	0.532***	-0.0760***	0.0817**	-0.121***
	(0.000)	(0.003)	(0.023)	(0.000)
N	479	479	479	479
r2	0.000150	0.215	0.196	0.306
r2_a	-0.00195	0.213	0.194	0.305

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "SupportConciliatoryMessages" is the average of the support of both messages and coded from 1 (Strongly disagree) to 4 (Strongly agree).

Figure 9: Attitudes by support for conciliatory messages



Notes: "SupportConciliatoryMessages" is the average of the support of both messages and coded from 1 (Strongly disagree) to 4 (Strongly agree).

Table 11: Effect of support for conciliatory messages on the effect of a message on attitudes on ingroup and outgroup members.

	(1) EffectOnIG	(2) EffectOnOG
SupportConciliatoryMessages	0.139***	0.0495***
	(0.000)	(0.000)
_cons	-0.451***	-0.0448*
	(0.000)	(0.074)
N	479	479
r2	0.268	0.0518
r2_a	0.267	0.0498

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "SupportConciliatoryMessages" is the average of the support of both messages and coded from 1 (Strongly disagree) to 4 (Strongly agree). The respective effect used as outcome variable is the difference between attitudes towards an ingroup/outgroup member who supports a conciliatory message and an ingroup/outgroup member in the control condition.

Survey

Variable names are written in **bold script.**

Comments from the author are marked by **[…].**

Start of Block: Consent

Consent

Dear participant, welcome to this research study!

Please review the following consent form before proceeding with our survey.

DESCRIPTION: You will be asked to answer questions about yourself and to make some judgments or decisions. Also, you will make decisions in economic games. The survey will take approximately 10 minutes to complete.
PAYMENT: You will receive a guaranteed participation compensation. Additionally, you might earn a bonus depending on the actions that you and other participants take. Please make sure that you click through to the end of the survey to be redirected to Prolific. We can only recompense participants who give answers to all questions and complete the last page of the study.
RISK AND BENEFITS: The risks to your participation in this online study are those associated with basic surveys including the recall of pleasant or unpleasant past experiences, such as mild stress. The benefit to you is the learning experience from participating in a research study. The benefit to society is the contribution to scientific knowledge.
PARTCIPANT RIGHTS: Your participation is voluntary. You have the right to see or withdraw your data at any time. Your responses will be recorded in a completely anonymous way. To secure the transparency of scientific findings, the completely anonymized data set will be published and made available to other researchers. Your prolific ID is only collected for purposes of payment. The dataset containing your prolific ID will be stored anonymously and in accordance with European data protection laws and will not be made available to others.

I am age 18 or older. I have read and understand the information above. I want to participate in this research and continue with the survey.

- ○ Yes
- ○ No

End of Block: Consent

Start of Block: Prolific ID

prolificID What is your Prolific ID?
Please note that this response should auto-fill with the correct ID

_____

End of Block: Prolific ID

Start of Block: Party

party In general, what is your political affiliation?

- ○ Democrat
- ○ Republican
- ○ Independent
- ○ Other
- ○ None

End of Block: Party

Start of Block: Attitudes towards both parties

thoughtsDems Please let us know in one or two sentences what you think about the Democratic Party:

_____

thoughtsReps Please let us know in one or two sentences what you think about the Republican Party:

_____

End of Block: Attitudes towards both parties

Start of Block: General Explanations

In the following we will present you **4 individuals who are also participants in this study.** For each individual we will ask you how you would split one Dollar with that person. One of the 4 individuals is randomly drawn after you have finished this study and we **pay you and the respective individual** the share you chose **as a bonus**.

End of Block: General Explanations

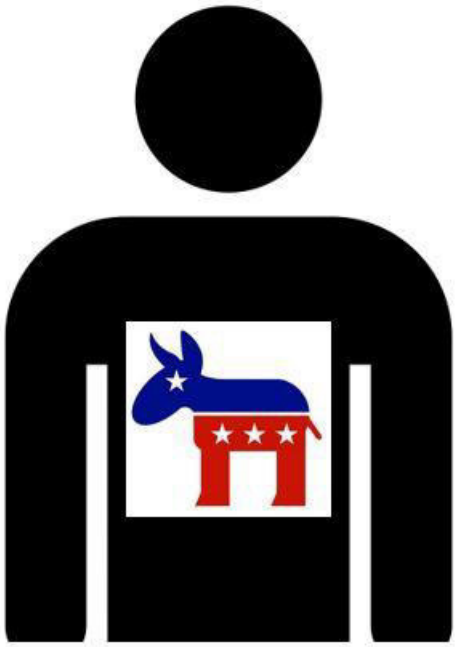
Start of Block: Person 1

Person 1 / 4

End of Block: Person 1

Start of Block: Democrat Control

The participant below favors **the Democrats**. He or she also supports most policy views of the Democrats.



demConBel Imagine the person above gets $1. How much do you think would this person **give to you** (in cents), if he or she would be aware of your favored party?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

demConDG You get $1. How much do you **want to give to the person above** (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

demConTrust How strongly do you **trust the person above?**

No trust at all Trust completely

0 10 20 30 40 50 60 70 80 90 100

Your answer:

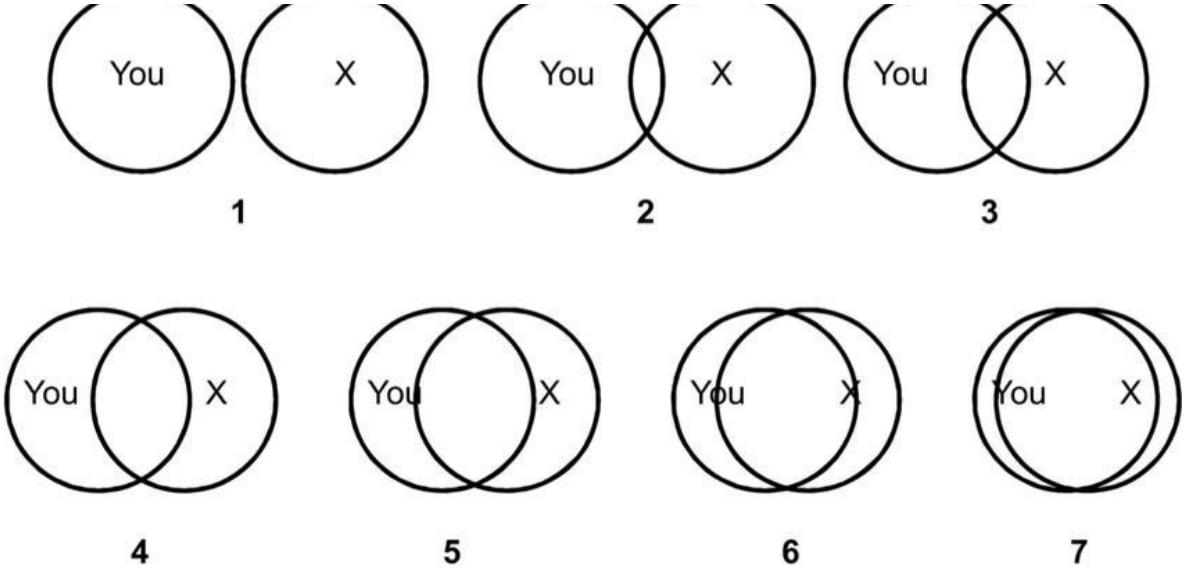
demConFriends On a scale from 0 - 100, could you imagine to **become friends** with the person above?

Could NOT become my friend — Could become my friend

0 10 20 30 40 50 60 70 80 90 100

Your answer:

The circle pairs below describe different degrees **how close you might feel** to the person above (denoted by "X").



demConIOS Which circle pair describes your feelings towards the person above?

- 1 - Not close at all
- 2
- 3
- 4
- 5
- 6
- 7 - Very close

End of Block: Democrat Control

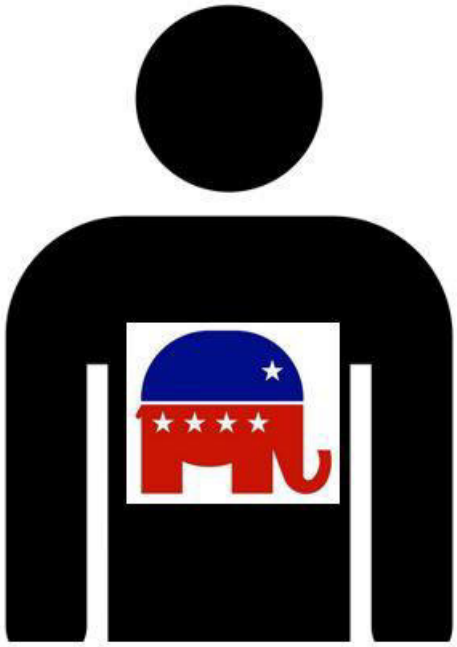
Start of Block: Person 2

Person 2 / 4

End of Block: Person 2

Start of Block: Republican Control

The participant below favors **the Republicans**. He or she also supports most policy views of the Republicans.



repConBel Imagine the person above gets $1. How much do you think would this person **give to you** (in cents), if he or she would be aware of your favored party?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

repConDG You get $1. How much do **you want to give to the person above** (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

repConTrust How strongly do you **trust the person above?**

No trust at all Trust completely

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

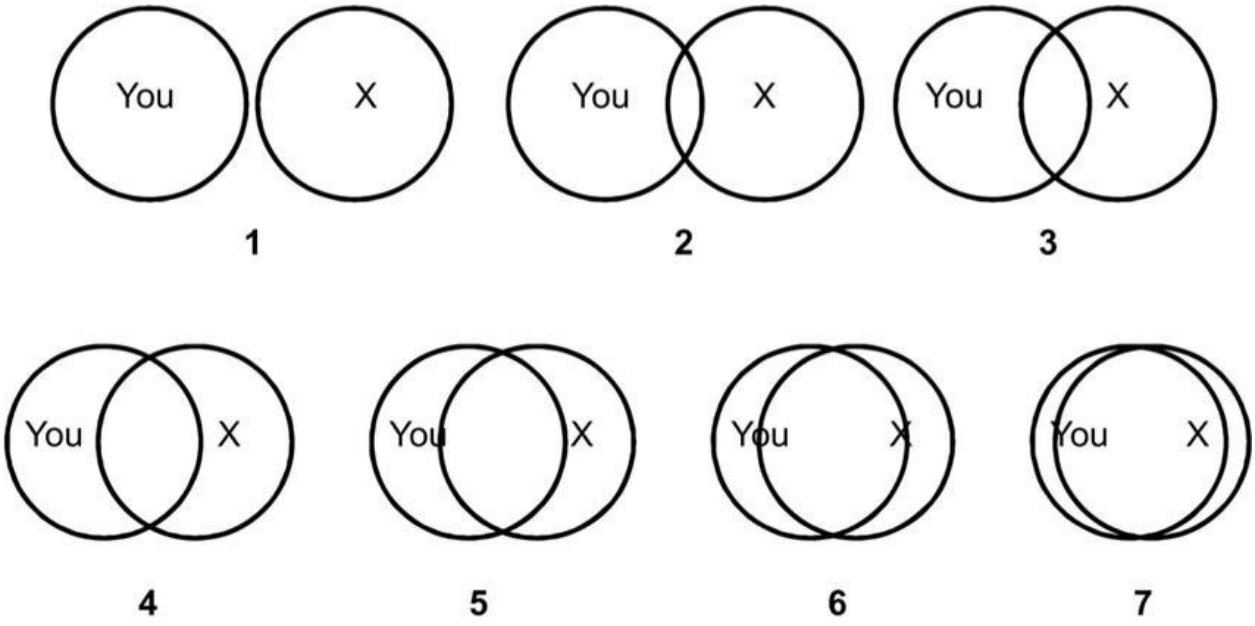
repConFriends On a scale from 0 - 100, could you imagine to **become friends** with the person above?

Could NOT become my friend — Could become my friend

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

The circle pairs below describe different degrees **how close you might feel** to the person above (denoted by "X").



repConIOS Which circle pair describes your feelings towards the person above?

- 1 - Not close at all
- 2
- 3
- 4
- 5
- 6
- 7 - Very close

End of Block: Republican Control

Start of Block: Person 3

Person 3 / 4

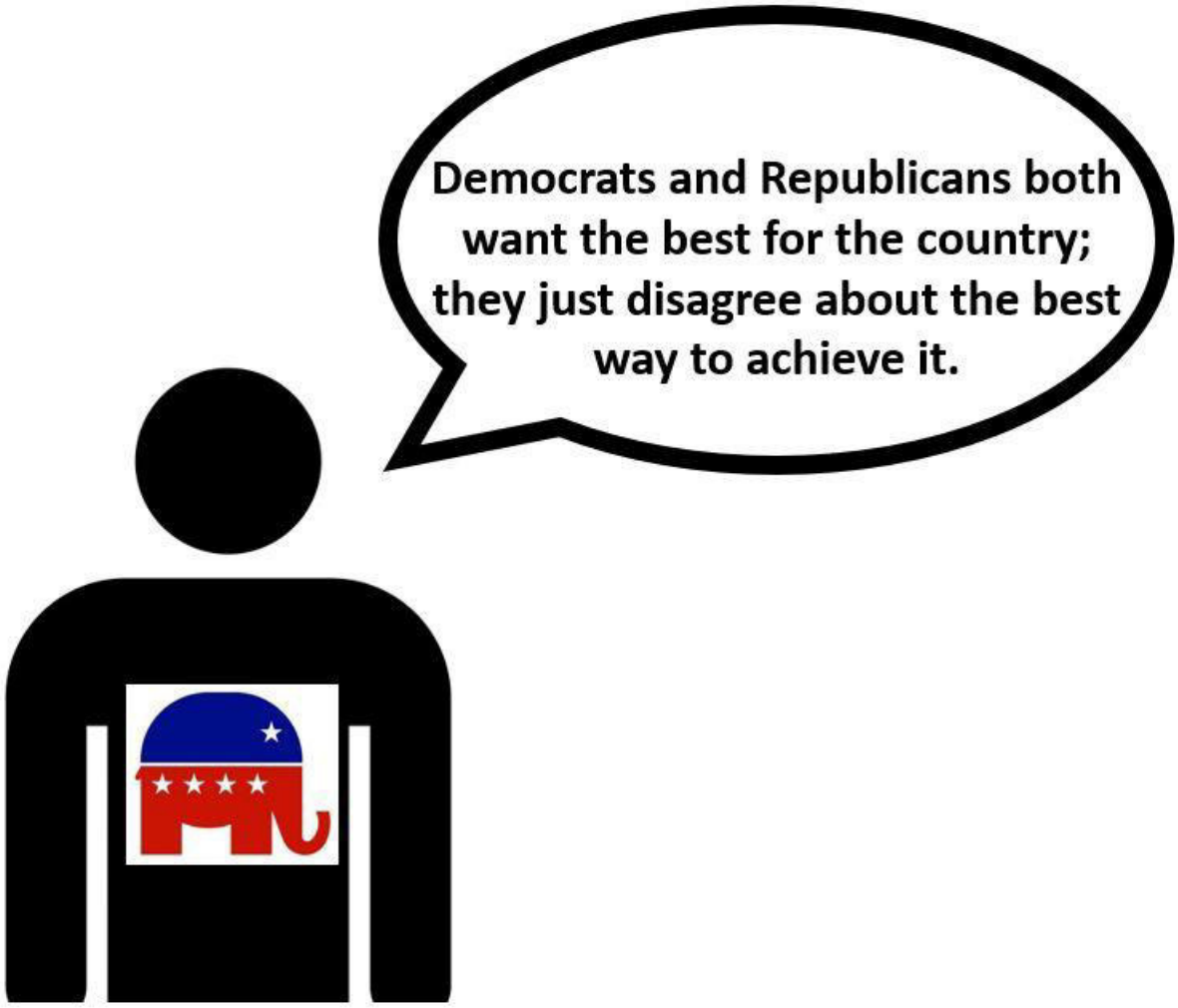
End of Block: Person 3

Start of Block: Republican Good Intentions

[I vary between subject whether a Republican or a Democrat supports the message below. See section 2 of the paper for details about the randomization.]

The participant below favors **the Republicans**. He or she also supports most policy views of the Republicans.

Moreover, he or she indicated that he/she is a supporter of the statement below.



repGlBel/demGlBel Imagine the person above gets $1. How much do you think would this person **give to you** (in cents), if he or she would be aware of your favored party?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

repGlDG/demGlDG You get $1. How much do **you want to give to the person above** (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

repGlTrust/demGlTrust How strongly do you **trust the person above?**

No trust at all Trust completely

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

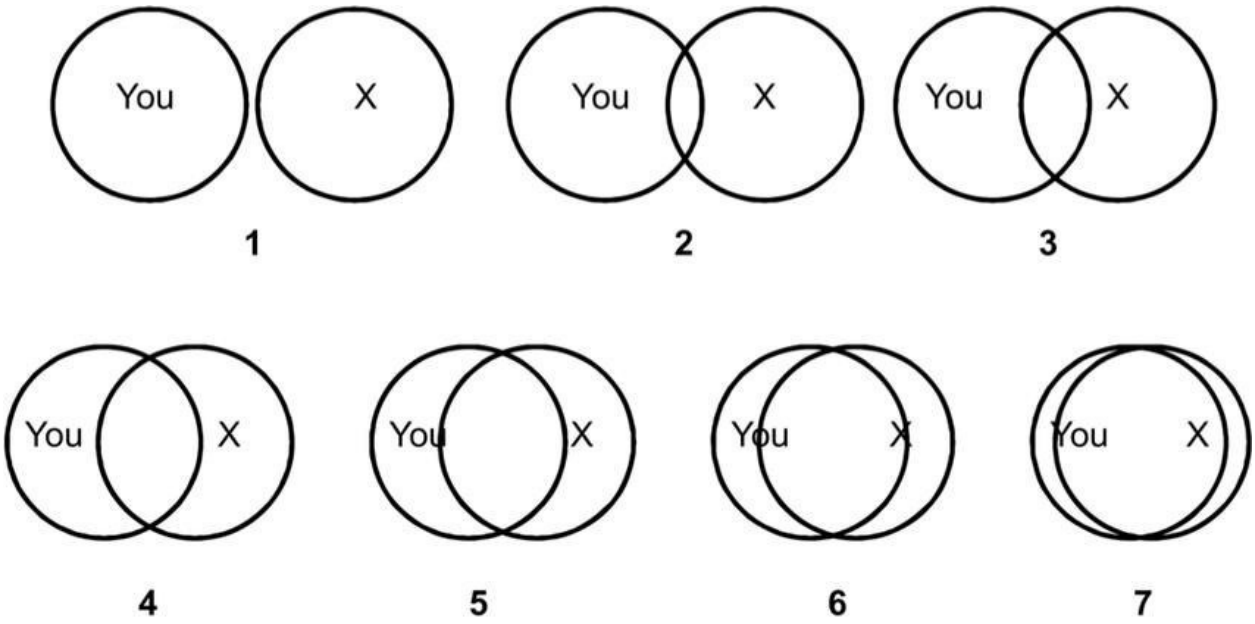
repGlFriends/demGlFriends On a scale from 0 - 100, could you imagine to **become friends** with the person above?

Could NOT become my friend Could become my friend

0 10 20 30 40 50 60 70 80 90 100

Your answer:	

The circle pairs below describe different degrees **how close you might feel** to the person above (denoted by "X").



repGIIOS/demGIIOS Which circle pair describes your feelings towards the person above?

- 1 - Not close at all
- 2
- 3
- 4
- 5
- 6
- 7 - Very close

End of Block: Republican Good Intentions

Start of Block: Person 4

Person 4 / 4

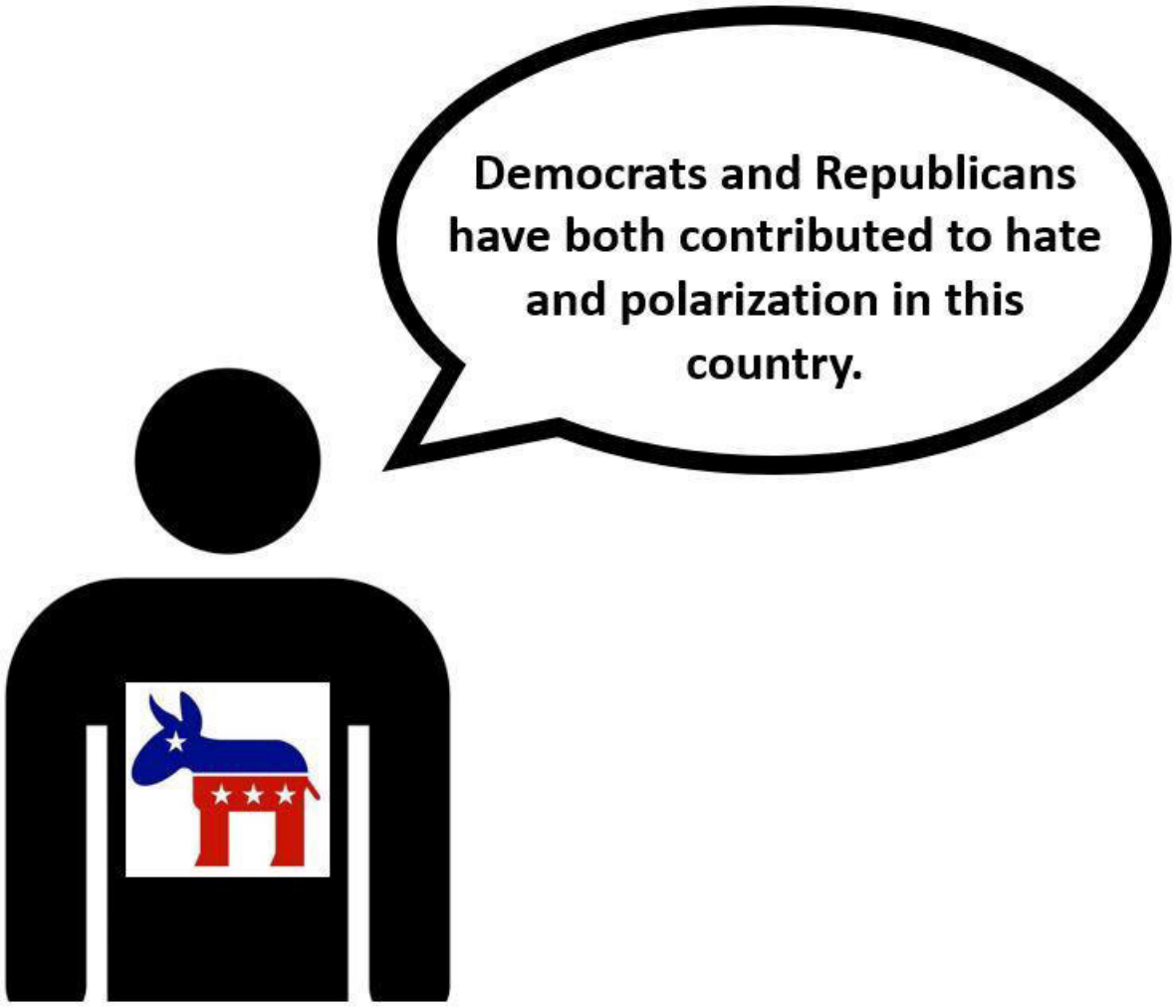
End of Block: Person 4

Start of Block: Democrat Sharing Blame

[I vary between subject whether a Republican or a Democrat supports the message below. See section 2 of the paper for details about the randomization.]

The participant below favors **the Democrats**. He or she also supports most policy views of the Democrats.

Moreover, he or she indicated that he/she is a supporter of the statement below.



demSBBel/repSBBel Imagine the person above gets $1. How much do you think would this person **give to you** (in cents), if he or she would be aware of your favored party?

0 10 20 30 40 50 60 70 80 90 100

Your answer:

demSBDG/repSBDG You get $1. How much do **you want to give to the person above** (in cents)?

0 10 20 30 40 50 60 70 80 90 100

Your answer:

demSBTrust/repSBTrust How strongly do you **trust the person above?**

No trust at all Trust completely

0 10 20 30 40 50 60 70 80 90 100

Your answer:

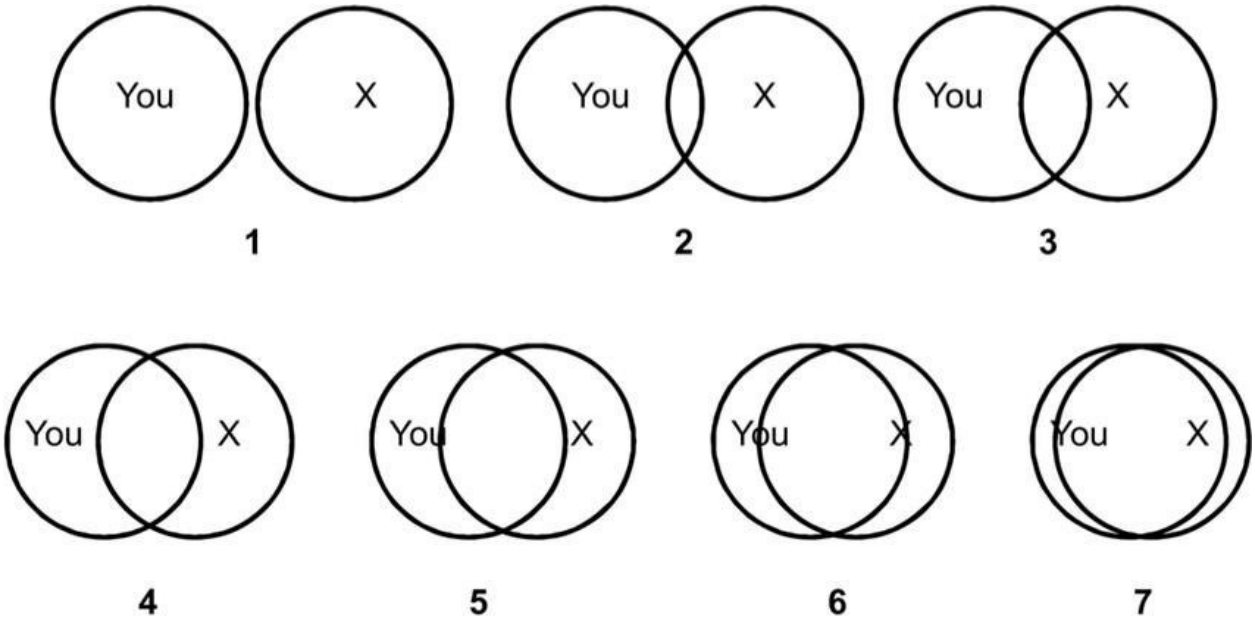
demSBFriends/repSBFriends On a scale from 0 - 100, could you imagine to **become friends** with the person above?

Could NOT become my friend Could become my friend

0 10 20 30 40 50 60 70 80 90 100

Your answer:

The circle pairs below describe different degrees **how close you might feel** to the person above (denoted by "X").



demSBIOS/repSBIOS Which circle pair describes your feelings towards the person above?

- 1 - Not close at all
- 2
- 3
- 4
- 5
- 6
- 7 - Very close

End of Block: Democrat Sharing Blame

Start of Block: Favored Statements

Please let us know how strongly you agree or disagree with the following statements:

Display This Question:

If In general, what is your political affiliation? = Democrat

repsResponsibleHate "Republicans are primarily responsible for hate and polarization in this country!"

- Strongly agree
- Agree
- Disagree
- Strongly disagree

Display This Question:

If In general, what is your political affiliation? = Democrat

repsWantHarm "Republicans are a destructive force and want to harm the country!"

- Strongly agree
- Agree
- Disagree
- Strongly disagree

Display This Question:

If In general, what is your political affiliation? = Republican

demsResponsibleHate "Democrats are primarily responsible for hate and polarization in this country!"

- Strongly agree
- Agree
- Disagree
- Strongly disagree

Display This Question:

If In general, what is your political affiliation? = Republican

demsWantHarm "Democrats are a destructive force and want to harm the country!"

- Strongly agree
- Agree
- Disagree
- Strongly disagree

---

goodIntentions "Democrats and Republicans both want the best for the country; they just disagree about the best way to achieve it."

- Strongly agree
- Agree
- Disagree
- Strongly disagree

---

sharingBlame "Democrats and Republicans have both contributed to hate and polarization in this country."

- Strongly agree
- Agree
- Disagree
- Strongly disagree

End of Block: Favored Statements

Start of Block: Further measures and demographics

strengthIdentification How strongly do you identify with your favored party?

- Very strongly
- Strongly
- Moderately
- Weakly

supportPartyPolicy How strongly do you support most policy views of your favored party?

- Very strongly
- Strongly
- Moderately
- Weakly

gender What is your gender?

- ○ Male
- ○ Female
- ○ Other

race Please tell us which racial category you identify with:

- ○ White
- ○ Black or African American
- ○ Biracial White and Black/African American
- ○ Asian
- ○ Other
- ○ None
- ○ Biracial Asian and White
- ○ Biracial Black/African American and Asian

---

education What is the highest level of education you have completed?

- ○ Less than high school degree
- ○ High school degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ More than master's degree
- ○ Prefer not to answer

---

statement1-4 Please indicate how strongly you agree or disagree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I do not enjoy competing with others	○	○	○	○	○
I do not enjoy working hard	○	○	○	○	○
It is important to pay attention in this study. Please click "strongly agree"	○	○	○	○	○
If I break the rules and a less educated/wealthy person reprimands me, that would bother me	○	○	○	○	○

---

age How old are you (in years)?

▼ 18 ... 99

income What is your annual income?

▼ Less than $10,000 ... More than $150,000

End of Block: Further measures and demographics

Start of Block: Feedback

Thank you for your answers!

Do you have any feedback for us? Was anything unclear?

End of Block: Feedback

Chapter 3

Why Care for Humanity?

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Abstract

Some of the most pressing challenges facing our planet – such as climate change, biodiversity loss, warfare, and extreme poverty – require social cohesion and prosocial action on a global scale. How can this be achieved? Previous research suggests that identity fusion – a strong form of group cohesion motivating prosocial action – results from perceptions of shared personally transformative experiences or of common biological essence. Here we present results from two studies with US samples exploring each pathway to identity fusion on a global scale. Study 1 focused on globally shared motherhood experiences and found that US mothers were more fused with women around the world if they shared motherhood experiences with them which was also reflected in money allocation behaviour. Study 2 showed that exposure to a talk about globally shared biology increased fusion with humanity at large, Americans, and the extended family suggesting that fusion with humanity does not need to weaken fusion with nation or extended family. We present evidence that the treatment increased concerns about the material wellbeing of all three groups. We discuss implications of our results for tackling global collective action problems and for future research on bonding with, and prosocial action towards, humanity at large.

1. Introduction

From tackling the climate crisis to preventing nuclear war, many of the world's largest-scale collective action problems require global cohesion and prosocial action. However, human group alignments are typically parochial, prioritizing regional, national, or local interests over global ones. Is it possible to create new forms of social cohesion on a global scale, capable of transcending and overcoming parochial concerns?

It is widely known that attempts to foster large-scale identities (e.g., national identity) can foster prosocial action between group members and mitigate internal conflict, as for instance the literature on nation-building demonstrates (e.g., Miguel, 2004; Bazzi et al., 2019; Depetris-Chauvin et al., 2020; Gehring, 2022). However, the question how to strengthen social cohesion on the global level is conceptually different, because there exist no human outgroup and there is surprisingly scarce evidence on this question despite the dire need for global prosocial action in the 21st century (for an overview see McFarland, 2019). The literature on global identity suggests that factors such as international contact (Römpke et al. 2019; Loy and Spence, 2020), mind body practices (Loy and Reese, 2019), and perceptions of equality-based respect (Renger and Reese, 2016) might foster global identity and prosocial action on the global scale. However, it remains a challenging task to create strong forms of global identity given that in most real-world contexts, regional, national, or local identities are stronger than global identity by far.

In this paper, we analyse the potential of 'identity fusion' – a visceral sense of oneness with the group – to strengthen social bonds and prosocial action on a global scale. Evidence from experimental psychology and anthropology has demonstrated that identity fusion creates a strong form of social cohesion characterized by porous boundaries between personal and group identities motivating particularly strong forms of prosocial action, ranging from hypothetical willingness to sacrifice oneself to save others (Gomez et al., 2011; Swann et al., 2012; Swann et al. 2014) to actually choosing to fight and die for the group (e.g., Whitehouse et al., 2014). Other outcomes that are associated with identity fusion range from increased willingness to trust others through to supporting other members of the group by donating blood, money, or other material resources (e.g., Buhrmester et al., 2015, Whitehouse et al., 2017).

The literature on identity fusion has identified two pathways that lead to high levels of fusion: shared self-defining experiences (such as experiencing terrorist attacks, natural disasters, frontline combat, painful initiation rites, or participating in extreme sports) and shared biological essence. The relationship between shared self-defining experiences and identity fusion has been studied in various contexts in correlational and quasi-experimental studies (e.g., Whitehouse et al., 2017) including longitudinal designs (e.g., Buhrmester et al., 2018), as well as experimental studies using tasks where study participants had to recall shared self-defining experiences (e.g., Jong et al., 2015). Studies that focus on the relationship between shared biological essence and identity fusion have utilized differences in genetic overlap between monozygotic and dizygotic twins (e.g., Vasquez et al. 2017; Whitehouse et al., 2017). Some studies have shown that fusion based on shared experience can be stronger than fusion based on shared biology by using priming methods (e.g., Whitehouse et al., 2017) or requiring armed militia to choose between family members and fellow fighters as their primary fusion targets (Whitehouse et al., 2014). It has also been argued that the shared biology pathway emerges earlier in development than the shared experiences pathway (Reese & Whitehouse, 2021). Nevertheless, in adults both pathways to fusion are associated with strong forms of pro-group action (Whitehouse, 2018) and in the context of this

study our main goal is not to compare the relative strength of each pathway but to establish whether both can contribute to cohesion and prosocial action not only in local or national contexts but also on a global scale.

Social identification (Tajfel and Turner, 1979; Tajfel, 1981) also motivates pro-group behaviour. While we do not focus on or test the differences between effects of identity fusion and effects of identification, past studies have presented evidence that identification differs fundamentally from fusion in its developmental pathways (Reese & Whitehouse, 2021), cognitive foundations (Whitehouse & Lanman, 2014), and downstream behavioural consequences (Swann et al., 2014). The main conceptual difference between fusion and identification is that fusion is characterized by a synergistic relationship between personal and groups identities (the one activating the other) whereas identification is characterized by a hydraulic relationship (making the one salient makes the other less so) (Swann and Buhrmester, 2015). While identity fusion and social identification in large-scale group categories may be highly correlated, even in such cases they are established through empirically distinguishable pathways (Muzzulini et al., 2021). Many studies have shown that fusion produces more extreme forms of pro-group action than social identification including self-sacrifice (for an overview, see Whitehouse, 2018). However, the main focus of this study is on whether the two hypothesized pathways to identity fusion could positively impact social bonds and prosocial behaviour on a global scale rather than on testing differences between identification and identity fusion. With regards to measurement, the pictorial scale for identity fusion we use (see Swann et al., 2009) is similar to the pictorial scale that is part of the 9-item "Identification With All Humanity Scale" utilized in McFarland et al. (2012).[1] Both go back to the "Inclusion of the Other in the Self Scale" proposed by Aron, Aron, and Smollan (1992). Swann et al. (2009) and Swann et al. (2012) offer a more comprehensive discussion of the pros and cons of the pictorial scale as well as other measures of identification and identity fusion and the empirical relationship between both.

In the following, we present the results of two studies with US samples designed to trigger each of the two pathways to identity fusion on a global scale respectively: perceptions of globally shared transformative experiences and species-wide shared biological essence. We see the two studies as starting points which harness the two pathways to identity fusion to strengthen social bonds on the global scale. Much more evidence is needed to properly assess the potential of these two pathways to strengthen social bonds on the global scale across diverse contexts, but the two studies we present could serve as a foundation for future endeavours.

In the first study, we focus on motherhood as a globally shared experience that transcends national, religious, or political boundaries. We focus on motherhood experiences because it is a highly transformative experience (Tasuji et al., 2020; Lönnqvist et al., 2018) shared by mothers all over the world. Obviously, motherhood is not experienced by everybody and transformative experiences such as suffering, struggle, or hope might be in one form or the other truly universally shared experiences. However, the global sharedness of these latter experiences might also be perceived as abstract by many, especially since suffering, struggle, or hope can take many different forms. Therefore, we have focused on globally shared motherhood experiences in this article to

[1] Differences between the pictorial scale used in Swann et al. (2009) and the pictorial scale used in McFarland et al. (2012) are the relative sizes of the circles symbolizing the self and the group (the "self" circle in Swann et al. (2009) is smaller than the "group" circle while they have equal sizes in McFarland (2012)) and the degrees of overlap (ranging to full overlap in Swann et al. (2009) and ranking to almost full overlap in McFarland et al. (2012)).

analyse whether transformative experiences can generate identity fusion that transcends national, religious, and ethnic boundaries. We leave the analysis of other globally shared experiences that are perhaps shared by an even larger group for future research.

In the first study, we measured fusion with and money allocation (using a validated survey measure) towards four groups: US mothers, US women, world's mothers, and world's women. Our subjects are US citizens and either female and mothers or female and not mothers. Subjects who are mothers are older, less educated, and politically more conservative than subjects who are not mothers, so we controlled for age, education, and party preferences. Controlling for these three variables, we found that subjects who are mothers were significantly more fused with and allocated significantly more money towards US mothers and world's mothers than subjects who were not mothers, while there were no significant effects on fusion with and money allocation towards US women and world's women. However, subjects who are mothers and subjects who are not mothers likely differ with regards to many unobservable characteristics and the comparison of the two groups is no causal evidence. Therefore, we conducted within-subject comparisons. We found that subjects who are mothers were significantly more fused with and allocated significantly more money towards US mothers than towards US women. Subjects who are mothers were also significantly more fused with and allocated significantly more money towards world's mothers than towards world's women. These patterns did not emerge for subjects who are not mothers. Comparing these differences for subjects who are mothers and subjects who are not mothers (difference in difference) showed that there were significant "shared motherhood" bonuses on fusion and money allocations both in the US context (comparing fusion with and money allocations towards US mothers and US women) and in the global context (comparing fusion with and money allocations towards world's mothers and world's women) that cannot be explained by differences in age, education, or party preferences.

In the second study, we used another US sample and exposed participants in a between subject design to a talk about globally shared biology that made the point that we are all part of a global family through descent from a common human ancestor. We found that exposure to the talk significantly increased fusion with humanity, but also fusion with fellow Americans and with the extended family. These results imply that fusion with humanity at large need not weaken fusion with more parochial groups such as nation or family. We did not find effects on fusion with the immediate family where shared biology is already highly salient.

We did not observe a significant ingroup bias in a validated money allocation task where subjects had to split money between a fellow American and a person from anywhere in the world. Thus, there was no room for the treatment to reduce it substantially and the treatment effect on this allocation decision was indeed not significant. However, we demonstrated that fusion mattered for money allocation behaviour by showing that fusion with humanity strongly and significantly increased the share that was allocated to the person from anywhere in the world if we controlled for fusion with Americans. The effect of fusion with Americans on the share that is allocated to the American had a similar size and was also significant if we controlled for fusion with humanity. Since the treatment increased fusion with humanity and fusion with Americans, this result suggests that the treatment made subjects care more strongly about the material wellbeing of both groups. We found similar effects for a second money allocation task where subjects had to split money between a random American and an extended family member.

Moreover, we found that the treatment significantly increased fusion with the political outgroup (Democrats vs Republicans) and made subjects allocate money significantly more equally between Democrats and Republicans. Thus, notions of shared biology might help to address not only global problems, but also to mitigate political conflicts within countries.

2. Study 1: Design and hypotheses

In our first study, we tested whether subjects were more fused with and allocated more money towards others with whom they shared a transformative experience both in a national context but also in a global context. We focused on motherhood as a shared experience because it is a personally transformative experience that is shared by mothers from all countries, religions, and political factions, transcending most other forms of group alignment. It has been shown previously that childbirth experiences can create social bonds between mothers (Tasuji et al., 2020). Here we present evidence that shared experiences of motherhood can fuse mothers not only from the same neighbourhood, ethnic group, or country, but also globally, across national borders.

We conducted our online study on Prolific where we ordered a sample of 1000 subjects. We excluded subjects who failed the attention check, did not identify as female or stated that they were a mother but indicated that they had 0 children. We ended up with a final sample size of 933 consisting of 481 mothers and 452 non-mothers. All subjects in the final sample were female and US citizens. The average age for mothers was 47 and for non-mothers 35. 51% of mothers had a university degree and 69% of non-mothers had a university degree. Among mothers, 47% supported the Democratic party and 26% supported the Republican party whereas among non-mothers 61% supported the Democratic party and 13% supported the Republican party.

The procedure of the study was as follows. First, we elicited demographics. Then, we asked subjects who are mothers to state how transformative they perceived motherhood. Non-mothers did not see this question. Then, we measured fusion of all subjects with four groups in random order: all US mothers, all US women, all the world's mothers, and all the world's women. We used a pictorial measure for identity fusion introduced by (Swann et al., 2009). The pictorial measure consists of 5 pictures. Each picture includes two circles that symbolize the self and a target group and overlap to various degrees. Subjects were asked to select the picture that best described their relationship with the target group. The pair of circles with least overlap (weakest fusion) was coded into the value 1 and the pair of circles with the strongest overlap (highest fusion) was coded into the value of 5. A substantial literature presents evidence that the pictorial measure of fusion predicts pro-group behavior and especially extreme actions for the sake of the group at large personal costs (Swann et al., 2009; Gomez et al. 2011).

Finally, we measured behaviour in four validated hypothetical money allocations where subjects were asked to split a hypothetical amount of $100 between two persons in each allocation. In each allocation decision, one person was a randomly selected American and the other person was a member of the above-mentioned groups. These hypothetical money allocations have been validated (Enke et al., 2022, Enke et al. 2023), i.e., it was shown that hypothetical allocation decisions predict incentivized allocation decisions as accurately as a second incentivized measurement a week after the initial measurement. Therefore, our hypothetical allocation decisions are meaningful measures how subjects weight the material wellbeing of different groups.

We pre-registered the following hypotheses:[2,3]

H1a: All subjects are more strongly fused with US mothers than with world's mothers.

H1b: All subjects are more strongly fused with US women than with world's women.

H1a and H1b hypothesize that subjects are more fused with their fellow. While we are primarily interested in shared motherhood experiences, differences regarding the nationality of the target groups might provide a first plausibility check and serve as a benchmark.

H2a: Mothers are more strongly fused with US mothers than with US women.

H2b: Mothers are more strongly fused with mothers of the world than women of the world.

H2a and H2b hypothesize that mothers are more strongly fused with other both in the US and globally.

H2c: Relative Fusion with US mothers vs US women (i.e., the difference) is higher for mothers with high perceived transformativeness levels.

H2d: Relative Fusion with world's mothers vs world's women (i.e., the difference) is higher for mothers with high perceived transformativeness levels.

H2c and H2d hypothesize that the perceived transformativeness of the shared experience is associated with higher relative fusion with others who shared that experience which is in line with identity fusion theory.

H3a: Subjects who are not mothers are not more strongly fused with US mothers than with US women.

H3b: Subjects who are not mothers are not more strongly fused with world's mothers than with world's women.

H3a and H3b hypothesize that subjects who are not mothers are not more fused with mothers than with women in general both in the US and globally. Comparing fusion levels of mothers and non-mothers does not generate causal evidence. However, H2a-H3b are consistent with the causal claim that motherhood increases fusion with other mothers, both in the national context and in the global context.

We pre-registered that we use difference in means tests to test our hypotheses and for H2c and H2d OLS regressions. We have not pre-registered and we do not perform multiple comparison corrections. We also pre-registered that we will test equivalent hypotheses for money allocation decisions.

3. Study 1: Results

3.1. Comparisons between subjects who are mothers and subjects who are not mothers

Fusion levels and money allocation behaviour of subjects who are mothers and subjects who are not mothers towards the four target groups are presented in figure 1. We start with a direct comparison between subjects who are mothers and subjects who are not mothers. Subjects who are mothers were more strongly fused with US mothers (OLS with robust SE, $b=1.74$, $p<0.001$,

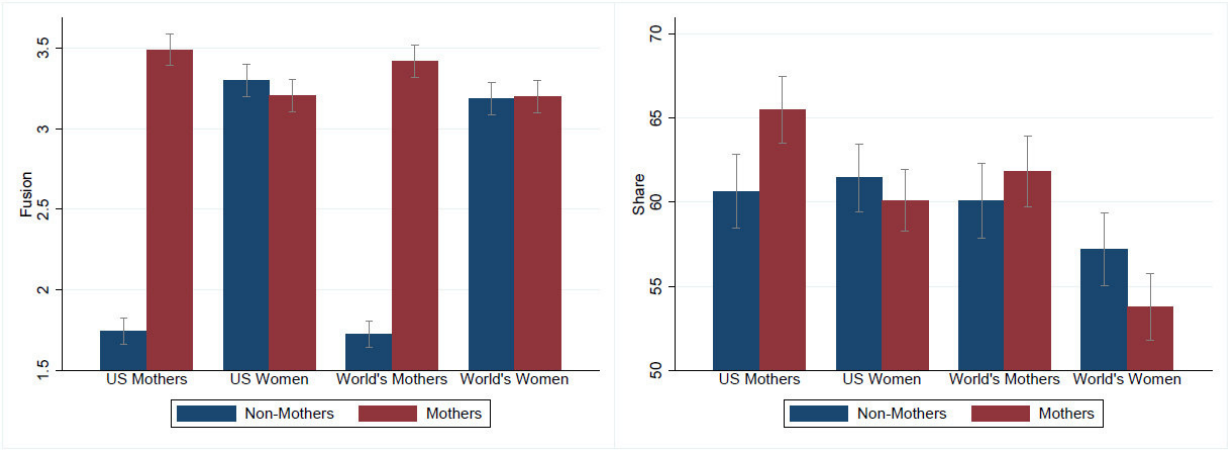
[2] See AsPredicted #120175: https://aspredicted.org/HFS_FT4

[3] We ran post hoc power analyses for our most relevant findings, yielding a power of 0.999 for H2a, H2b, H3a, and H3b with an alpha of 0.05.

table 1a, column 1) than subjects who are not mothers. Subjects who are mothers were also more strongly fused with world's mothers (OLS with robust SE, b=1.69, p<0.001, table 1a, column 5) than subjects who are not mothers. There are no significant differences for fusion with US women and fusion with world's women. Controlling for age, education, and party preferences does not change these results.

Subjects who are mothers allocated $4.84 more to US mothers than subjects who are not mothers (OLS with robust SE, p=0.001, table 1b, column 1). There are no significant effects regarding allocations towards US women and world's mothers and subjects who are not mothers allocated $3.41 more to world's women than subjects who are mothers (p=0.023, table 1b, column 7). However, subjects who are mothers were older, more conservative, and less educated than subjects who are not mothers and money allocation results change when we control for age, education, and party preferences. In this case, there are positive effects of the motherhood status of the subject on allocations to US mothers (b=$9.68, p<0.001, table 1, column 2) and world's mothers (b=$8.91, p<0.001, table 1b, column 6), while there are no significant effects on money allocations towards US women and world's women. Thus, if we control for age, education, and party preferences, the money allocation results show the same patterns as the fusion results.[4]

Figure 1. Fusion and money allocations



(a) Fusion (b) Money Allocations

Notes: Figure 1a captures fusion levels with the four target groups for subjects who are mothers (red bars) and subjects who are not mothers (blue bars). Figure 1b captures money allocations towards the four target groups for subjects who are mothers (red bars) and subjects who are not mothers (blue bars). Confidence intervals have confidence level 0.95.

Table 1. Comparing subjects who are mothers and subjects who are not mothers

(a) Fusion

[4] Mediation analyses with fusion as the mediator variable, motherhood status of the subject as the independent variable and money allocations as the outcome variable revealed significant indirect effects for the target groups US mothers and world's mothers (see table 20 SM).

	US mothers		US women		World's mothers		World's women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother	1.747***	1.720***	-0.0951	-0.0567	1.692***	1.650***	0.0158	0.0176
	(0.000)	(0.000)	(0.188)	(0.494)	(0.000)	(0.000)	(0.827)	(0.832)
_cons	1.743***	1.729***	3.301***	3.437***	1.726***	1.621***	3.186***	3.195***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	933	933	933	933	933	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

(b) Money Allocations

	US mothers		US women		World's mothers		World's women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother	4.838***	9.675***	-1.333	0.745	1.750	8.907***	-3.406**	2.871*
	(0.001)	(0.000)	(0.341)	(0.636)	(0.265)	(0.000)	(0.023)	(0.085)
_cons	60.65***	73.07***	61.45***	65.63***	60.08***	75.90***	57.19***	69.86***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	933	933	933	933	933	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: Controls include age, education, and party preferences. "Mother" is a dummy variable that takes the value of 1 if the subject is a mother. The outcome variable is fusion with the respective target group in (a) and the share that is allocated towards the respective target group in (b).

3.2. Within-subject comparisons

Subjects who are mothers and subjects who are not mothers likely differed in a lot of unobservable characteristics that affect fusion and money allocation behavior. Hence, the comparison between both groups is not causal evidence regarding the effect of motherhood experiences. Therefore, in the following we test our pre-registered hypotheses that focus on within-subject comparisons.

We find significant effects that support all our hypotheses concerning fusion levels. First, we show that fusion was affected by nationality. Subjects were more fused with US mothers than with world's mothers ($M_{FusionUSMothers}$= 2.64; $M_{FusionWorldsMothers}$= 2.60; p=0.019 (two-tailed);

H1a) and more fused with US women than with world's women ($M_{FusionUSWomen}$= 3.25; $M_{FusionWorldsWomen}$= 3.19; p=0.012 (two-tailed); H1b).[5]

Next, we focus on subjects who are mothers. Subjects who are mothers were more fused with fellow mothers than with women in general both in the national context ($M_{FusionUSMothers}$= 3.49; $M_{FusionUSWomen}$= 3.21; p<0.001 (two-tailed); H2a) and in the global context ($M_{FusionWorldsMothers}$= 3.42; $M_{FusionWorldsWomen}$= 3.20; p<0.001 (two-tailed); H2b).

For subjects who are mothers, the difference between fusion levels with mothers and fusion levels with women in general increased in perceived transformativeness of motherhood both in the national context (OLS with robust SE, p<0.001; see table 5 SM; H2c) and in the global context (OLS with robust SE, p<0.001; see table 6 SM; H2d). The fact that the difference between fusion with mothers and women in general increased in transformativeness is consistent with the theoretical idea that the effect of sharing experiences is larger, the more transformative the shared experience is.

Subjects who are not mothers were more fused with women in general than with mothers both in the national context ($M_{FusionUSMothers}$= 1.74; $M_{FusionUSWomen}$= 3.30; p<0.001 (two-tailed); H3a) and in the global context ($M_{FusionWorldsMothers}$= 1.73; $M_{FusionWorldsWomen}$= 3.19; p<0.001 (two-tailed); H3b). The facts that mothers were more fused with mothers and non-mothers were more fused with women in general are consistent with the idea that the shared transformative experience of motherhood creates fusion both nationally and across national borders.

Fusion and money allocations correlated significantly for all four target groups: US mothers, US women, world's mothers and world's women (all p-values < 0.004; see table 18 SM). However, while there were significant effects that support H1a-H2c for money allocations as the outcome, there were no significant effects for H2d and H3a for money allocations and the effect for H3b goes in the different direction.

Subjects allocated more to US mothers than to world's mothers ($M_{ShareUSMothers}$= \$63.14; $M_{ShareWorldsMothers}$= 60.98; p<0.001 (two-tailed); H1a) and more to US women than to world's women ($M_{ShareUSWomen}$= \$60.76; $M_{ShareWorldsWomen}$= 55.43; p<0.001 (two-tailed); H1b).[6]

Subjects who are mothers allocated more to US mothers than to US women ($M_{ShareUSMothers}$= 65.49; $M_{ShareUSWomen}$= 60.11; p<0.001 (two-tailed); H2a) and more to world's mothers than to world's women ($M_{ShareWorldsMothers}$= \$61.83; $M_{ShareWorldsWomen}$= \$53.78; p<0.001 (two-tailed); H2b). These effects go in the same direction as the effects on fusion. For subjects who are mothers, the difference between allocations to mothers and allocations to non-mothers increased in perceived transformativeness of motherhood in the national context (OLS with robust SE, p=0.044; see table 14 SM; H2c). In the global context, the effect is not significant (OLS with robust SE, p=0.413; see table 15 SM; H2d).

For subjects who are not mothers, there was no significant difference between allocations to US women and US mothers ($M_{ShareUSMothers}$= \$60.65; $M_{ShareUSWomen}$= \$61.45; p=0.434 (two-tailed); H3a). Moreover, subjects who are not mothers allocated more to world's mothers than to world's women ($M_{ShareWorldsMothers}$= \$60.08; $M_{ShareWorldsWomen}$= \$57.19; p<0.001 (two-

[5] All fusion results that relate to the hypotheses are also significant at the 1% level if we use Wilcoxon matched-pairs signed-rank tests.

[6] The results for money allocations that relate to H1a-H2b are still significant at the 1% level if we use Wilcoxon matched-pairs signed-rank tests. Using Wilcoxon matched-pairs signed-rank tests we get a p-value of 0.016 for the test of H3a and a p-value below 0.001 for the test of H3b.

tailed); H3b). The latter effect does not go in the same direction as the respective effect on fusion, which is an unexpected result. The fact that the term "world's mother" might cue association with charity, and potential concerns about child wellbeing might have contributed to this result. In addition to these potential motives, there could also be effects due to the mere salience of children in an international context that affect prosociality (Wolf et al., 2022). However, regardless of such a ``world's mothers" fixed effect that increased allocations towards world's mothers for all subjects, it is still the case that the difference between what was allocated to world's mothers and what was allocated to world's women is larger for subjects who are mothers themselves as the following difference in difference results show.

Table 2 includes difference in difference results comparing within-subject differences of subjects who are mothers and subjects who are not mothers. The dependent variable in column 1 is the difference between fusion with US mothers and fusion with US women where high values indicate that the subject was more strongly fused with US mothers than with US women. Column 1 shows that this difference is significantly higher for subjects who are mothers than for subjects who are not mothers. Adding controls in column 2 does not meaningfully change the effects size nor the p-value suggesting that the difference in difference cannot be explained by age, education, or party preferences. Columns 3 and 4 include equivalent regressions for the global context while columns 4 to 8 include equivalent regressions for money allocations. Coefficients are stable after adding controls in all four cases and even slightly increase in the money allocation regressions. The results show that mothers (as compared to non-mothers) were more fused with other mothers than with women in general and allocated more money towards other mothers than to women in general in a US context and in a global context. Thus, we see highly significant "shared motherhood" bonuses on fusion and money allocations in the US and the global context which cannot be explained by differences in age, education, or party preferences.

Columns 7 and 8 show that although subjects who are mothers and subjects who are not mothers allocated more to world's mothers than to world's women, the difference between what was allocated towards world's mothers and world's women is still significantly larger for subjects who are mothers themselves.

Table 2. Difference in difference results

	Fusion US		Fusion World		Allocation US		Allocation World	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother	1.842***	1.776***	1.676***	1.633***	6.171***	8.929***	5.156***	6.035***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
_cons	-1.558***	-1.708***	-1.460***	-1.574***	-0.796	7.444***	2.889***	6.038***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.433)	(0.000)	(0.000)	(0.001)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	933	933	933	933	933	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: In columns 1-4, the dependent variable is the difference between fusion with mothers and fusion with women. In columns 5-8, the dependent variable is the difference between allocation to mothers and allocation to women. Columns 1,2,5,6 capture the US context while columns 3,4,7,8 capture the global context. Controls include age,

education, and party preferences. “Mother” is a dummy that takes the value of 1 if the subject is a mother and 0 otherwise.

4. Study 2: Design and hypotheses

We conducted our second study on Prolific where we ordered a sample of 400 subjects. We had a final sample of 319 subjects who passed attention and comprehension checks and did not report technical problems. All subjects were American citizens. The mean age was 39, 56% of the subjects had a university degree, and 56% of the subjects were male. 45% supported the Democratic party and 15% the Republican party.

The study had two between-subject conditions: the video condition and a control condition. The procedure of the study was as follows. First, we elicited demographic information. In the video condition, we showed subjects a video about globally shared biology before we asked comprehension check questions and measured opinions about the video and outcomes. In the control condition, we measured outcomes first before we showed the video, asked comprehension check questions, and measured opinions about the video. This approach allowed us to screen out subjects who failed to answer the comprehension check questions correctly or reported technical problems in both conditions in order to avoid selective attrition.

The video featured a TED Talk in which the journalist A.J. Jacobs demonstrates that all humans are biologically related to each other, share common ancestors and thus all belong to a great human family. He illustrates his point by showing that he is a distant cousin of various celebrities. He speaks about the concept of a global family tree encompassing all human beings and invites everybody to a globally family reunion event in New York. Jacobs states the wish that humans should engage in less hostile and more friendly interactions knowing that we are all family.[7] After subjects had watched the video, we elicited whether subjects faced technical problems and asked two comprehension check questions.

As outcome variables, we measured fusion outcomes and monetary allocation outcomes. We used the same measurement tools as in the first study. We measured fusion with six groups: i) humanity as a whole, ii) all Americans, iii) the subject's extended family, iv) the subject's immediate family, v) supporters of the Democrats and vi) supporters of the Republicans. Moreover, we measured behaviour in three money allocation decisions where subjects had to split $100 between two persons in each allocation decision. Subjects had to make allocation decisions between the following people: (1) a randomly selected person from anywhere in the world vs a randomly selected American, (2) a member of the extended family vs a randomly selected American and (3) a member of the Democrats vs a member of the Republicans. As explained in study 1, the money allocation tasks are validated, i.e., is has been shown that hypothetical allocation decisions predict incentivized allocation decisions very accurately. In the following, we refer to ingroup bias, if a subject favored the American in decision (1), favored the member of the extended family in decision (2), and favored one side over the other in decision (3). In the case of (2) and (3), both persons were Americans, but differed in other group affiliations, i.e., family member vs non-family member in (2) and political affiliation in (3). Therefore, we speak of ingroup bias even if both persons were Americans in (2) and (3).

[7] The url of the video is: https://www.youtube.com/watch?v=2_lBiFZ85d0

We pre-registered 3 hypotheses:[8,9]

H1: State fusion with humanity as a whole will be larger in the treatment condition.

H2: The difference between state fusion with supporters of the Democrats and state fusion with supporters of the Republicans will be smaller in the treatment condition.

H3: Exposure to the video will reduce ingroup bias in all three hypothetical money allocations.

State fusion is a measure of fusion with a group at a given time and differs from the standard version only by adding the phrase "right now" when asking participant which pictorial diagram best describes their relationship with the respective group. In the following we just use the term "fusion". We cannot answer the question how strongly the effects of interventions highlighting globally shared biology persist over time and leave that for future research.

While we are primarily interested in the effect of the treatment on fusion with humanity, we also tested whether appeals to globally shared biological essence have unifying potential within countries in H2. We pre-registered that we will use OLS regressions to analyze whether exposure to the video affects the relevant outcomes. We have not pre-registered and we do not perform multiple comparison corrections.

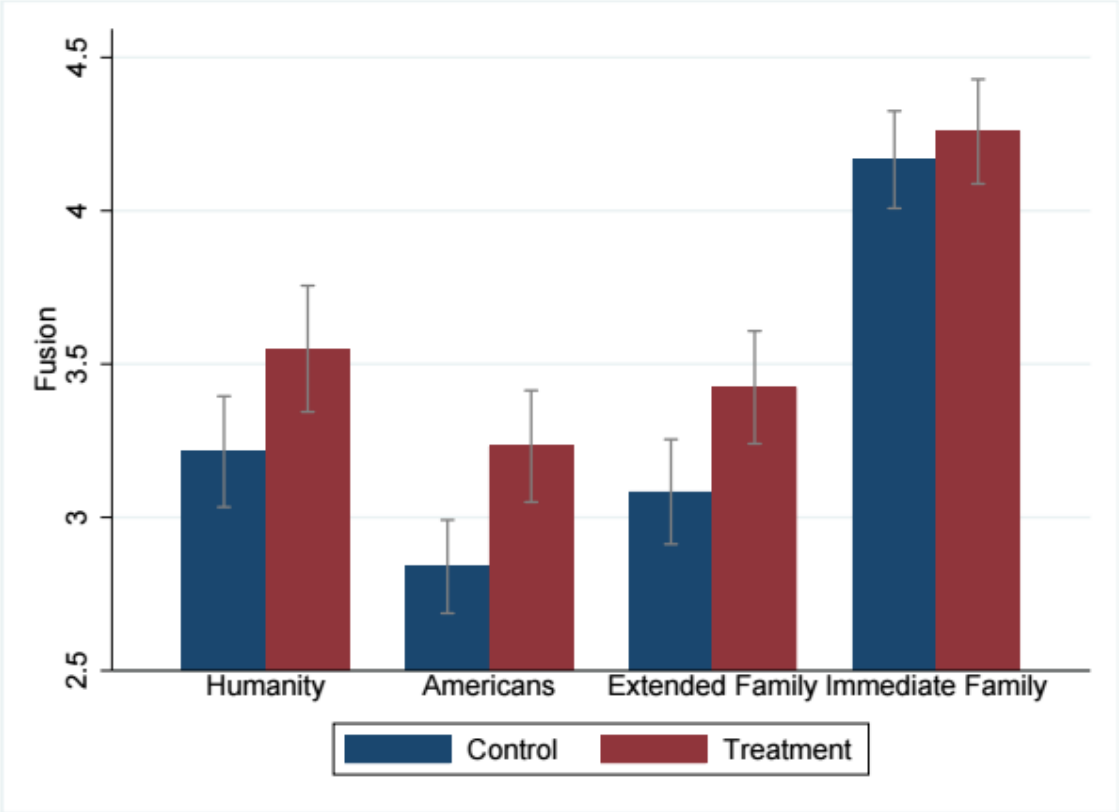
5. Study 2: Results

Fusion levels with humanity, Americans, extended family, and immediate family by treatment status are presented in figure 2.

Figure 2. Fusion levels by treatment status

[8] See Aspredicted #120278: https://aspredicted.org/HN5_2DD

[9] A post hoc power analysis yielded a power of 0.779 for the results regarding H1, 0.706 for the results regarding H2, and 0.785 for the third money allocation with an alpha of 0.05 (the effects for the first two money allocations are not significant).



Notes: Confidence intervals have confidence level 0.95.

Exposure to the video increased fusion with humanity (OLS with robust SE; b=0.335; p=0.017; table 21 SM; H1), Americans (OLS with robust SE; b=0.393; p=0.001; table 21 SM), and the extended family (OLS with robust SE; b=0.341; p=0.008; table 21 SM). There was no significant effect on fusion with the immediate family (OLS with robust SE; b=0.092; p=0.441; table 21 SM).[10] Shared ancestors and biology with the immediate family are perhaps already salient which might explain why exposure to the video did not generate a significant effect. Moreover, shared ancestors in the case of the immediate family are likely well known to most members of the immediate family whereas in the case of the extended family, shared ancestors might be less well known personally and less salient, thus leaving some room for the treatment to increase their salience.

Exposure to the video decreased the absolute difference between fusion with supporters of the Democrats and fusion with supporters of the Republicans significantly (OLS with robust SE; b=--0.269; p=0.030; table 23 SM). The video increased fusion with supporters of the outgroup party for subjects who support the Democrats (OLS with robust SE; b=0.697; p<0.001; table 23 SM) and for subjects who support the Republicans (OLS with robust SE; b=0.772; p=0.017; table 23 SM).[11] There were no significant effects on fusion with supporters of the ingroup party for subjects

[10] Results are robust with regards to the inclusion of control variables (age, gender, education, and party preferences) into the regressions (see tables 22 SM, 24 SM, and 28 SM).

[11] The number of Republicans in the main analysis was only 49. A post hoc power analysis yielded a power of 0.82 with an alpha of 0.05 for the treatment effect on fusion with Democrats for the subjects who support the Republicans. However, our primary interest lies in the overall treatment effect and not in comparing subjects who support the Democrats and subjects who support the Republicans.

who support the Democrats (OLS with robust SE; b=0.291; p=0.086; table 23 SM) and for subjects who support the Republicans (OLS with robust SE; b=0.434; p=0.121; table 23 SM).

The previous results suggest that notions of shared biology might not only increase fusion with humanity at large on a global level but also with the political opponent on a national level. Thus, notions of shared biology might help to address not only global problems, but also help to mitigate conflicts along political lines on the national level. Moreover, the increases in fusion with humanity at large and the political opponent do not go hand in hand with decreases in fusion with the country or the political ingroup. Thus, high levels of fusion with different groups might coexist and fusion with different groups of people does not follow a zero-sum logic.

In the first money allocation decision subjects had to split $100 between a random person who lives anywhere in the world and a random person who lives in the US. There was no significant treatment effect on allocations (OLS with robust SE; b=-$0.80; p=0.735; table 27 SM). However, subjects allocated $51 to the American and $49 to the world citizen in the control condition which does not significantly differ from the 50/50 split. Thus, ingroup bias did not exist and hence there was no room for the treatment to reduce it.

In the second allocation decision subjects had to split $100 between a member of the subject's extended family and a random person who lives in the US. We use the term ingroup bias if a subject allocated more to her extended family member than to the random person who lives in the US. Both persons might be Americans but differ in their family affiliation, thus one person belongs to the extended family ingroup and the other one does not. The effect on ingroup bias was not significant (OLS with robust SE; b=-$3.46; p=0.234; table 27 SM).

Note however, that the first and the second allocation decision were a measure of how much subjects cared about the respective person *relative* to the other one. Since the video increased fusion with humanity, Americans, and the extended family, it is likely that treated subjects cared more strongly about both persons in both allocation decisions. Table 3 presents evidence that fusion mattered for money allocation behaviour. Column 1 shows that in the first allocation decision, fusion with humanity significantly increased money allocation towards the world citizen by $4.06 per point on the fusion scale if we control for fusion with Americans (OLS with robust standard errors; p=0.001). Column 2 shows that in the second allocation, fusion with Americans significantly increased money allocation towards Americans by $4.26 per point on the fusion scale if we control for fusion with the extended family (OLS with robust standard errors; p=0.001). These results show that fusion matters for money allocation behaviour suggesting that higher fusion levels for both sides due to the treatment balanced out which might explain the absence of significant effects in the univariate regressions.

Table 3. Effects of fusion on allocations 1 and 2

	(1) ShareAmerican	(2) ShareFamily
FusionAmericans	4.067***	-4.256***
	(0.006)	(0.006)
FusionHumanity	-4.065***	
	(0.001)	
FusionExtFamily		5.511***
		(0.001)
_cons	52.43***	66.61***
	(0.000)	(0.000)
N	319	319

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column 1 analyzes the first allocation and column 2 analyzes the second allocation decision. The two independent variables in both columns capture fusion towards both sides of the respective allocation.

In the third allocation decision subjects had to split $100 between a member of the Democrats and a member of the Republicans. Subjects in the treatment group made allocations that were $6.05 closer to an equal split (OLS with robust SE; p=0.016; table 27 SM), i.e. they showed less favoritism to one side or the other.[12]

6. Discussion

In study 1 we have shown that female subjects who are mothers were more fused with and allocated more money towards other mothers than women in general both in a national context and in a global context. These patterns did not emerge for female subjects who are not mothers. A difference in difference analysis revealed significant "shared motherhood" bonuses on fusion and money allocations in both the national and the global context that cannot be explained by age, education, or party preferences. In study 2 we have provided causal evidence that notions of globally shared biology increase fusion with humanity, nation, and extended family and we have provided evidence that the treatment has increased concerns for the material wellbeing of all three groups. Exposure to the treatment has also increased fusion with the political outgroup and decreased ingroup bias in money allocations between political ingroup and outgroup.

A limitation of study 1 is that motherhood experiences – although shared across national, religious, and ethnic boundaries – are not shared by everybody. Transformative experiences such as suffering, struggle, or hope might perhaps be even more universally shared, but their global sharedness might also be more abstract than globally shared motherhood experiences. We leave it to further research to explore the potential of other globally shared experiences to foster bonding with humanity.

[12] A mediation analyses with the absolute difference between fusion with Democrats and fusion with Republicans as the mediator variable, treatment status as the independent variable and the absolute difference in money allocations as the outcome variable revealed a significant indirect effect (see table 31 SM).

A limitation of study 2 is that while the video saliently highlights globally shared biology, it includes also other features. It references to celebrities and politicians across the political spectrum including Barack Obama and George H.W. Bush. While these references might have effects on their own, politicians across the political spectrum are referenced which generates a certain political balance. Moreover, the video includes some humor and advocates directly for identification with humanity as a pro-social initiative. While these two factors might confound the effects of the pure informational aspects, they improve the validity of the design to capture effects of normatively motivated attempts to foster bonding with humanity using a positive and lighthearted rhetorical style. However, it would be worthwhile for future research to test the effects of information provision about globally shared biology on bonding with humanity without the potential confounds discussed above which might also facilitate to compare effects in multi-country studies.

Future research might test the effectiveness of globally shared transformative experiences and globally shared biology to foster bonding with humanity and prosocial action on the global scale in more applied settings and with additional outcomes like cooperation with foreigners, donations, or support for policies that benefit humanity. Furthermore, future research might test the effectiveness of these two strategies in diverse populations. However, the existing literature on identity fusion presents clear evidence that the two pathways to fusion work cross-culturally, suggesting that globally shared transformative experiences and perceptions of globally shared biology are potentially effective strategies to foster fusion with and prosocial behavior towards humanity in all human groups (Whitehouse, 2021). However, much more evidence on the effectiveness of these two strategies to foster bonding with humanity is needed. In the case of study 1, it remains an open question whether the same globally shared experiences are equally effective at fostering bonding with humanity across cultural contexts.[13] In case of study 2, the talk we used as the treatment was given by a US citizen and was tailored towards a US audience. Therefore, future research might analyze whether a more culturally neutral intervention highlighting globally shared biology generates similar effects across countries and cultural contexts.[14]

These two strategies could transform efforts to address global collective action problems in at least three ways. First, systems of formal education, including national curricula, could incorporate a stronger emphasis on globally shared history and ancestry in ways that increase support for global cooperation in the next generation. Whereas it is already the norm in many countries to regard the teaching of national, religious, and ethnic histories as a fundamental obligation of schools, it could (perhaps additionally) become a requirement to place more emphasis on global citizenship based around the shared collective experiences and common origins of humanity at large. Our second study showed that high levels of fusion with humanity and with other groups like nation or family are not mutually exclusive and can coexist. Thus, policies that strengthen fusion with humanity at large do not necessarily crowd out fusion with other relevant groups.

Second, political leaders with an interest in fostering cooperation on global challenges such as the climate crisis could utilize these findings to bring domestic audiences behind them and to galvanize coordinated action in international arenas.

Third, a wide range of transnational interest groups devoted to prosocial goals – ranging from NGOs tackling poverty or disaster management to religious organizations promoting peace and

[13] See Hanel et al. (2019) on how similarities between diverse groups can improve attitudes towards an outgroup.
[14] Kimel et al. (2016) present evidence that perceptions of genetic overlap between groups in conflict are related to peaceful behaviour towards the outgroup in a Middle East context.

reconciliation – could more effectively harness the natural human propensity to bond and cooperate, by recognizing that much of what defines us as individuals is also fundamental to us as a global community. Although further work is needed to develop practical interventions capable of fulfilling this potential, the psychological foundations on which we must build are becoming increasingly evident.

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37. Data Set Study 1: “Data Motherhood”
38. Data Set Study 2: “Data Biology”

Supplementary Materials: Why Care for Humanity?

Lukas Reinhardt, Harvey Whitehouse

1 Supplementary Tables for Study 1

1.1 Results Identity Fusion

1.1.1 H1

Table 1: Testing H1a (t-test with two-tailed p-values)

	(1) FusionUSMothers	(2) FusionWorldsMothers	(3) diff.
Mean	2.644***	2.598***	0.0461**
	(0.000)	(0.000)	(0.019)
N	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Testing H1b (t-test with two-tailed p-values)

	(1) FusionUSWomen	(2) FusionWorldsWomen	(3) diff.
Mean	3.252***	3.194***	0.0579**
	(0.000)	(0.000)	(0.012)
N	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

1.1.2 H2

Table 3: Testing H2a (t-test with two-tailed p-values)

	(1) FusionUSMothers	(2) FusionUSWomen	(3) diff.
Mean	3.491***	3.206***	0.285***
	(0.000)	(0.000)	(0.000)
N	481	481	481

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers.

Table 4: Testing H2b (t-test with two-tailed p-values)

	(1) FusionWorldsMothers	(2) FusionWorldsWomen	(3) diff.
Mean	3.418***	3.202***	0.216***
	(0.000)	(0.000)	(0.000)
N	481	481	481

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers.

Table 5: Testing H2c

	FusionUSMothers - FusionUSWomen
Transformativeness	0.0909***
	(0.000)
Constant	-0.530**
	(0.020)
N	481
r2	0.0338

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers. We measured transformativeness of motherhood on a scale from 1 (low transformativeness) to 10 (high transformativeness).

Table 6: Testing H2d

	FusionWMothers - FusionWWomen
Transformativeness	0.119***
	(0.000)
Constant	-0.852***
	(0.000)
N	481
r2	0.0555

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers. We measured transformativeness of motherhood on a scale from 1 (low transformativeness) to 10 (high transformativeness).

1.1.3 H3

Table 7: Testing H3a (t-test with two-tailed p-values)

	(1) FusionUSMothers	(2) FusionUSWomen	(3) diff.
Mean	1.743***	3.301***	-1.558***
	(0.000)	(0.000)	(0.000)
N	452	452	452

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are not mothers.

Table 8: Testing H3b (t-test with two-tailed p-values)

	(1) FusionWorldsMothers	(2) FusionWorldsWomen	(3) diff.
Mean	1.726***	3.186***	-1.460***
	(0.000)	(0.000)	(0.000)
N	452	452	452

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are not mothers.

1.1.4 Other Fusion Results

Table 9: Effects of age on fusion with mothers for subjects who are not mothers

	FusionWorldsMothers	FusionUSMothers
Age	-0.00489	-0.00580*
	(0.141)	(0.067)
Constant	1.899***	1.948***
	(0.000)	(0.000)
N	452	452
r2	0.00497	0.00666

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

1.2 Results Money Allocations

1.2.1 H1

Table 10: Testing H1a (t-test with two-tailed p-values)

	(1) ShareUSMother	(2) ShareWorldsMother	(3) diff.
Mean	63.14***	60.98***	2.163***
	(0.000)	(0.000)	(0.001)
N	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Testing H1b (t-test with two-tailed p-values)

	(1) ShareUSWoman	(2) ShareWorldsWoman	(3) diff.
Mean	60.76***	55.43***	5.326***
	(0.000)	(0.000)	(0.000)
N	933	933	933

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

1.2.2 H2

Table 12: Testing H2a (t-test with two-tailed p-values)

	(1) ShareUSMother	(2) ShareUSWoman	(3) diff.
Mean	65.49***	60.11***	5.374***
	(0.000)	(0.000)	(0.000)
N	481	481	481

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers.

Table 13: Testing H2b (t-test with two-tailed p-values)

	(1) ShareWorldsMother	(2) ShareWorldsWoman	(3) diff.
Mean	61.83***	53.78***	8.046***
	(0.000)	(0.000)	(0.000)
N	481	481	481

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are mothers.

Table 14: Testing H2c

	ShareUSMother - ShareUSWoman
Transformativeness	1.381**
	(0.044)
Constant	-7.011
	(0.272)
N	481
r2	0.0167

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes subjects who are mothers. We measured transformativeness of motherhood on a scale from 1 (low transformativeness) to 10 (high transformativeness).

Table 15: Testing H2d

	ShareWMother - ShareWWoman
Transformativeness	0.450
	(0.413)
Constant	4.013
	(0.422)
N	481
r2	0.00131

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes subjects who are mothers. We measured transformativeness of motherhood on a scale from 1 (low transformativeness) to 10 (high transformativeness).

1.2.3 H3

Table 16: Testing H3a (t-test with two-tailed p-values)

	(1) ShareUSMother	(2) ShareUSWoman	(3) diff.
Mean	60.65***	61.45***	-0.796
	(0.000)	(0.000)	(0.434)
N	452	452	452

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are not mothers.

Table 17: Testing H3b (t-test with two-tailed p-values)

	(1) ShareWorldsMother	(2) ShareWorldsWoman	(3) diff.
Mean	60.08***	57.19***	2.889***
	(0.000)	(0.000)	(0.000)
N	452	452	452

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table includes only subjects who are not mothers.

1.3 Other Results

1.3.1 Correlations between Fusion and Money Allocations

Table 18: Correlations between fusion and money allocations across all four target groups

a) US Mothers

	FusionUSMothers	ShareUSMother
FusionUSMothers	1	
ShareUSMother	0.161***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

b) US Women

	FusionUSWomen	ShareUSWoman
FusionUSWomen	1	
ShareUSWoman	0.115***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

c) World's Mothers

	FusionWorldsMothers	ShareWorldsMother
FusionWorldsMothers	1	
ShareWorldsMother	0.0963**	1
	(0.003)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

d) World's Women

	FusionWorldsWomen	ShareWorldsWoman
FusionWorldsWomen	1	
ShareWorldsWoman	0.150***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

1.3.2 Pregnancy and Wish for Children

Table 19: Diff in Diff results excluding pregnant subjects who do not have children yet (n=6) and subjects who do not have children, but reported a wish for children (n=119)

	Fusion US		Fusion World		Allocation US		Allocation World	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother	1.906***	1.836***	1.761***	1.692***	8.631***	10.61***	5.719***	6.214***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
_cons	-1.621***	-1.855***	-1.544***	-1.757***	-3.257**	4.268*	2.327**	4.782**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.067)	(0.017)	(0.031)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	808	808	808	808	808	808	808	808
r2	0.463	0.476	0.434	0.445	0.0439	0.0644	0.0217	0.0273

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: In columns 1-4, the dependent variable is the difference between fusion with mothers and fusion with women. In columns 5-8, the dependent variable is the difference between allocation to mothers and allocation to women. Columns 1,2,5,6 capture the US context while columns 3,4,7,8 capture the global context. Controls include age, education, and party preferences. "Mother" is a dummy that takes the value of 1 if the subject is a mother and 0 otherwise.

1.3.3 Mediation Analysis

Table 20: Mediation analysis

	US mothers	World's mothers
controlled direct effect	-0.0947	-2.062
	(0.962)	(0.312)
natural indirect effect	4.933***	3.812***
	(0.000)	(0.004)
total effect	4.838***	1.750
	(0.001)	(0.265)

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table shows mediation analyses with fusion as the mediator variable, subject's motherhood status as the independent variable and money allocations as the outcome variable for the target groups US mothers (column 1) and world's mothers (column 2).

2 Supplementary Tables for Study 2

2.1 Fusion Results

Table 21: Treatment effects on fusion levels

	(1) FusionHumanity	(2) FusionAmericans	(3) FusionExtFamily	(4) FusionImFamily
Treatment	0.335**	0.393***	0.341***	0.0916
	(0.017)	(0.001)	(0.008)	(0.441)
_cons	3.214***	2.839***	3.083***	4.167***
	(0.000)	(0.000)	(0.000)	(0.000)
N	319	319	319	319
r2	0.0180	0.0326	0.0219	0.00188

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 22: Treatment effects on fusion levels with controls

	(1) FusionHumanity	(2) FusionAmericans	(3) FusionExtFamily	(4) FusionImFamily
Treatment	0.282**	0.347***	0.296**	0.0956
	(0.046)	(0.004)	(0.020)	(0.418)
_cons	3.417***	2.728***	2.742***	4.043***
	(0.000)	(0.000)	(0.000)	(0.000)
Controls	Yes	Yes	Yes	Yes
N	319	319	319	319
r2	0.0766	0.0963	0.132	0.0816

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: Controls include age, gender, education, and party preferences.

Table 23: Treatment effects on fusion with Democrats and Republicans

	Full sample	Subjects supporting Democrats		Subjects supporting Republicans	
	(1)	(2)	(3)	(4)	(5)
	FusionDiffRepDem	FusionDemocrats	FusionRepublicans	FusionRepublicans	FusionDemocrats
Treatment	-0.269**	0.291*	0.697***	0.434	0.722**
	(0.030)	(0.086)	(0.000)	(0.121)	(0.017)
_cons	1.196***	3.188***	1.522***	3.111***	1.778***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	319	142	142	49	49
r2	0.0148	0.0209	0.0943	0.0515	0.120

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "FusionDiffRepDem" denotes the absolute difference between fusion with Democrats and fusion with Republicans.

Table 24: Treatment effects on fusion with Democrats and Republicans with Controls

	Full sample	Subjects supporting Democrats		Subjects supporting Republicans	
	(1)	(2)	(3)	(4)	(5)
	FusionDiffRepDem	FusionDemocrats	FusionRepublicans	FusionRepublicans	FusionDemocrats
Treatment	-0.324***	0.271	0.651***	0.345	0.776**
	(0.005)	(0.124)	(0.001)	(0.243)	(0.024)
_cons	1.998***	2.991***	0.970***	3.586***	1.518***
	(0.000)	(0.000)	(0.004)	(0.000)	(0.005)
Controls	Yes	Yes	Yes	Yes	Yes
N	319	142	142	49	49
r2	0.219	0.0489	0.150	0.169	0.160

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "FusionDiffRepDem" denotes the absolute difference between fusion with Democrats and fusion with Republicans. Controls include age, gender, education, and party preferences.

Table 25: Interaction of treatment and importance of family on fusion

	(1)	(2)	(3)	(4)
	FusionHumanity	FusionAmericans	FusionExtFamily	FusionImFamily
Treatment=1	2.603***	1.338**	1.224	0.958
	(0.000)	(0.022)	(0.115)	(0.242)
ImportanceFamily	0.282**	0.268***	0.547***	0.603***
	(0.014)	(0.001)	(0.000)	(0.000)
Treatment=1 × ImportanceFamily	-0.513***	-0.210	-0.189	-0.183
	(0.001)	(0.115)	(0.267)	(0.301)
Constant	1.952***	1.641***	0.639	1.469**
	(0.000)	(0.000)	(0.275)	(0.019)
N	319	319	319	319
r2	0.0472	0.0521	0.129	0.164

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: "ImportanceFamily" is coded from 1 to 5 where higher values denote that family is of higher importance to the subject.

Table 26: Treatment effects on fusion only for subjects who did not guess the purpose of the study correctly

	(1) FusionHumanity	(2) FusionAmericans	(3) FusionExtFamily	(4) FusionImFamily
Treatment	0.298**	0.357***	0.339**	0.0776
	(0.041)	(0.005)	(0.012)	(0.532)
_cons	3.253***	2.846***	3.074***	4.154***
	(0.000)	(0.000)	(0.000)	(0.000)
N	300	300	300	300
r2	0.0141	0.0262	0.0213	0.00132

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: We asked subjects at the end of the study what they think the purpose of the study was (see variable "purpose" in the data set). We coded the written responses by our selves (see dummy "GuessedPurpose" in the code (do-file)). We excluded subjects who correctly guessed that this study is i) about the causal effect of the video and ii) testing whether the video increases fusion with humanity or universalism in the money allocations.

2.2 Money Allocation Results

Table 27: Treatment effects on ingroup bias in money allocations

	(1) ShareAmerican	(2) ShareFamily	(3) Diff5050DemRep	(4) Diff5050DemRep	(5) Diff5050DemRep
Treatment	-0.803	-3.455	-6.047**	-9.826***	-4.655
	(0.735)	(0.234)	(0.016)	(0.004)	(0.456)
_cons	51.40***	73.26***	29.76***	38.83***	28.52***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	319	319	319	142	49
r2	0.000361	0.00442	0.0183	0.0585	0.0117

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: In the first allocation decision (column 1), subjects had to split \$100 between a randomly selected American and a randomly selected person from anywhere in the world. The outcome variable captures the share that was allocated to the American. In the second allocation decision (column 2) subjects had to split \$100 between a member of the subject's extended family and a random person who lives in the US. The outcome variable captures the share that was allocated to the extended family member. In the third allocation decision (column 3) subjects had to split \$100 between a member of the Democrats and a member of the Republicans. The outcome variable captures the absolute difference between the share that was allocated to the favored side (i.e. the highest of the two shared) and \$50. Column 4 includes only subjects who favor the Democrats and column 5 only includes subjects who favor the Republicans.

Table 28: Treatment effects on ingroup bias in money allocations with controls

	(1) ShareAmerican	(2) ShareFamily	(3) Diff5050DemRep	(4) Diff5050DemRep	(5) Diff5050DemRep
Treatment	-1.160	-2.538	-7.049***	-10.39***	-8.485
	(0.617)	(0.376)	(0.004)	(0.003)	(0.187)
_cons	34.62***	61.75***	37.26***	39.13***	38.22***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Controls	Yes	Yes	Yes	Yes	Yes
N	319	319	319	142	49
r2	0.122	0.119	0.136	0.0862	0.191

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: In the first allocation decision (column 1), subjects had to split \$100 between a randomly selected American and a randomly selected person from anywhere in the world. The outcome variable captures the share that was allocated to the American. In the second allocation decision (column 2) subjects had to split \$100 between a member of the subject's extended family and a random person who lives in the US. The outcome variable captures the share that was allocated to the extended family member. In the third allocation decision (column 3) subjects had to split \$100 between a member of the Democrats and a member of the Republicans. The outcome variable captures the absolute difference between the share that was allocated to the favored side (i.e. the highest of the two shared) and \$50. Column 4 includes only subjects who favor the Democrats and column 5 only includes subjects who favor the Republicans. Controls include age, gender, education, and party preferences.

Table 29: Heterogeneous effects along party preferences

	(1)
	Diff5050DemRep
Treatment=1	-9.826***
	(0.004)
Republican=1	-10.31**
	(0.033)
Treatment=1 × Republican=1	5.171
	(0.460)
Constant	38.83***
	(0.000)
N	191
r2	0.0681

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column 1 only includes subjects who favor the Democrats or the Republicans. The outcome variable captures the absolute difference between the share that was allocated to the favored side in the third allocation decision (i.e. the highest of the two shares) and \$50.

2.3 Other Results

Table 30: Correlations between fusion and money allocations

a) Allocation 1

	ShareAmerican	FusionDiffAmeHum
ShareAmerican	1	
FusionDiffAmeHum	0.196***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

b) Allocation 2

	ShareFamily	FusionDiffFamAme
ShareFamily	1	
FusionDiffFamAme	0.219***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

c) Allocation 3

	Diff5050DemRep	FusionDiffRepDem
Diff5050DemRep	1	
FusionDiffRepDem	0.544***	1
	(0.000)	

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: "FusionDiffAmeHum" is the difference between fusion with Americans and fusion with humanity. "ShareAmerican" is the amount that is allocated to the American in allocation 1. "FusionDiffFamAme" is the difference between fusion with extended family and fusion with Americans. "ShareFamily" is the amount that is allocated to the extended family member in allocation 2. "FusionDiffDemRep" is the absolute difference between fusion with supporters of the Democrats and fusion with supporters with the Republicans. "Diff5050DemRep" is the absolute difference between the share that was allocated to the favored side in the third allocation decision (i.e. the highest of the two shares) and $50.

Table 31: Mediation analysis

	Allocation 1	Allocation 2	Allocation 3
controlled direct effect	-1.036	-3.199	-3.130
	(0.657)	(0.261)	(0.139)
natural indirect effect	0.233	-0.256	-2.918**
	(0.621)	(0.689)	(0.032)
total effect	-0.803	-3.455	-6.047**
	(0.735)	(0.236)	(0.015)

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Notes: The mediation analysis in column 1 has the difference between fusion with Americans and fusion with humanity as the mediator variable, treatment status as the independent variable and the share that is given to the American as the outcome variable. The mediation analysis in column 2 has the difference between fusion with the extended family and fusion with Americans as the mediator variable, treatment status as the independent variable and the share that is given to the extended family member as the outcome variable. The mediation analysis in column 3 has the absolute difference between fusion with Democrats and fusion with Republicans as the mediator variable, treatment status as the independent variable and the absolute difference between the share that was allocated to the favored side in the third allocation decision (i.e. the highest of the two shares) and $50 as the outcome variable.

Survey Study 1 (Motherhood)

Variable names are in **bold script.**

Start of Block: Consent

consent

Informed Consent/ Assent Form

Participation in this study is voluntary and no personal data that can identify you will be collected. To participate in this study, you must be at least 18 years old.
For your participation in this study, you will receive a payment. Your participation is entirely voluntary and you may withdraw from participation at any time during the survey, without providing any reasons. You may withdraw from the study without penalty or loss of benefits to which you may otherwise be entitled. Compensation will be awarded upon completion of the entire study.
There are no known risks to participating in this study. Data are anonymized and only data without any personal information will be used in analysis and shared with other researchers. You will never be identified as a participant. If you have any questions, you may contact us via the Prolific chat. Please indicate whether you agree to participate in this study.

- ○ I AGREE to participate
- ○ I DO NOT AGREE to participate

End of Block: Consent

Start of Block: Prolific ID

prolificID

What is your Prolific ID?
Please note that this response should auto-fill with the correct ID

_____

End of Block: Prolific ID

Start of Block: Demographics

Welcome to our study!
Before we start with the main part of the study, please answer the questions below.

---

age

How old are you (in years)?

▼ 18... 99

---

school

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ More than master's degree

---

gender

What is your gender?

- ○ Male
- ○ Female
- ○ Other

---

mother

Are you a mother?

- ○ No
- ○ Yes

---

births

How many times have you given birth?

▼ 0... More than 7

---

attentioncheck

Please indicate how strongly you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It is important to me how others think about me	○	○	○	○	○
I believe that society is based on rules and everyone must follow the rules	○	○	○	○	○
It is important to pay attention in this study. Please click "Strongly agree"	○	○	○	○	○
It is important to be kind to others, even strangers	○	○	○	○	○

Page Break

Display This Question:

If Are you a mother? = Yes

transformativeness

You stated that you are a mother.

Please let us know how well the following statement describes your own experiences regarding motherhood:

"Motherhood changed my life profoundly and I would not be the same person today without this experience. Motherhood is one of the most memorable and meaningful experiences in my life."

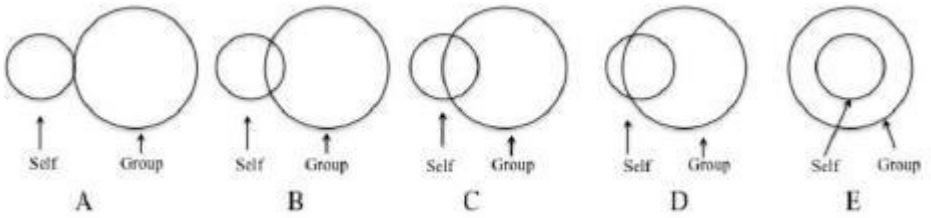
	Describes my experience not at all									Describes my experience perfectly well
	1	2	3	4	5	6	7	8	9	10
Your answer: ()										

End of Block: Demographics

Start of Block: Fusion elicitation US mothers

fusionUSMothers

Looking at the diagram below, please choose one of the letters (A, B, C, D, or E) shown below the picture that best represents your relationship with the group, in this case the group being **all US mothers.**



Which picture describes your relationship to the group of **all US mothers** best?

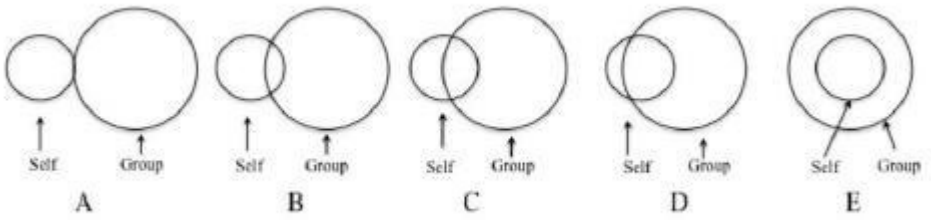
- A
- B
- C
- D
- E

End of Block: Fusion elicitation US mothers

Start of Block: Fusion elicitation US women

fusionUSWomen

Looking at the diagram below, please choose one of the letters (A, B, C, D, or E) shown below the picture that best represents your relationship with the group, in this case the group being **all US women.**



Which picture describes your relationship to the group of **all US women** best?

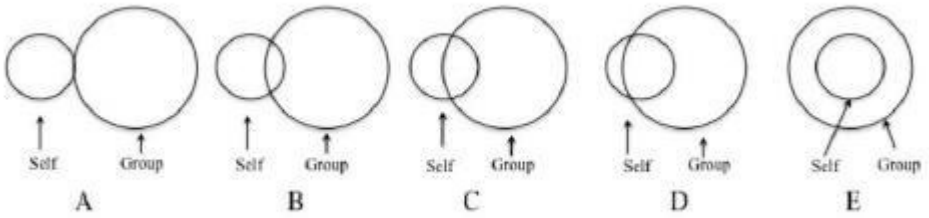
- ○ A
- ○ B
- ○ C
- ○ D
- ○ E

End of Block: Fusion elicitation US women

Start of Block: Fusion elicitation worlds mothers

fusionWorldsMothers

Looking at the diagram below, please choose one of the letters (A, B, C, D, or E) shown below the picture that best represents your relationship with the group, in this case the group being **all the world's mothers.**



Which picture describes your relationship to the group of **all the world's mothers** best?

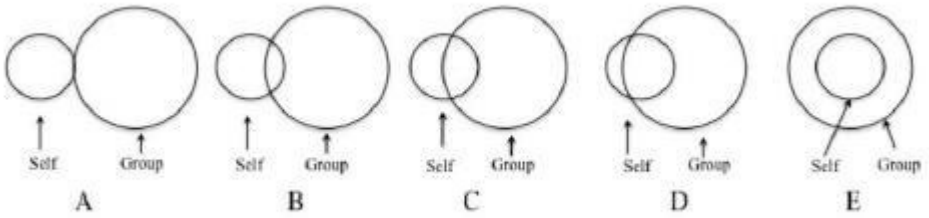
- ○ A
- ○ B
- ○ C
- ○ D
- ○ E

End of Block: Fusion elicitation worlds mothers

Start of Block: Fusion elicitation worlds women

fusionWorldsWomen

Looking at the diagram below, please choose one of the letters (A, B, C, D, or E) shown below the picture that best represents your relationship with the group, in this case the group being **all the world's women.**



Which picture describes your relationship to the group of **all the world's women** best?

- ○ A
- ○ B
- ○ C
- ○ D
- ○ E

End of Block: Fusion elicitation worlds women

Start of Block: Money Allocation Decisions US mother

shareUSMother

How would you split $100 between...

A randomly selected US mother : _____
A randomly selected American : _____
Total : _____

End of Block: Money Allocation Decisions US mother

Start of Block: Money Allocation Decisions US woman

shareUSWoman

How would you split $100 between...

A randomly selected US woman : _____
A randomly selected American : _____
Total : _____

End of Block: Money Allocation Decisions US woman

Start of Block: Money Allocation Decisions worlds mother

shareWorldsMother

How would you split $100 between...

A randomly selected mother from anywhere in the world : _____
A randomly selected American : _____
Total : _____

End of Block: Money Allocation Decisions worlds mother

Start of Block: Money Allocation Decisions worlds women

shareWorldsWoman

How would you split $100 between...

A randomly selected woman from anywhere in the world : _____
A randomly selected American : _____
Total : _____

End of Block: Money Allocation Decisions worlds women

Start of Block: Post outcome measures

party

Is there a political party with which you identify?

- Democratic Party
- Republican Party
- Independents
- No party expresses my views
- Prefer not to answer

Display This Question:

If Are you a mother? = No

pregnant

Are you currently pregnant?

- ○ Yes
- ○ No
- ○ Prefer not to answer

Page Break

Display This Question:

If Are you a mother? = No

And Are you currently pregnant? != Yes

wishForChildren

Do you want to become a mother one day?

- ○ Yes
- ○ No
- ○ Not sure
- ○ Prefer not to say

End of Block: Post outcome measures

Start of Block: Feedback

feedback

Optional: Do you have any feedback for us? Was anything unclear?

_____

End of Block: Feedback

Survey Experiment 2

Survey Study 2 (Shared Biology)

Variable names are in **bold script.**

Start of Block: Consent

consent

Informed Consent/ Assent Form

Participation in this study is voluntary and no personal data that can identify you will be collected. To participate in this study, you must be at least 18 years old.
For your participation in this study, you will receive a payment. Your participation is entirely voluntary and you may withdraw from participation at any time during the survey, without providing any reasons. You may withdraw from the study without penalty or loss of benefits to which you may otherwise be entitled. Compensation will be awarded upon completion of the entire study. There are no known risks to participating in this study. Data are anonymized and only data without any personal information will be used in analysis and shared with other researchers. You will never be identified as a participant. If you have any questions, you may contact us via the Prolific chat.
Please indicate whether you agree to participate in this study.

- ○ I AGREE to participate
- ○ I DO NOT AGREE to participate

End of Block: Consent

Start of Block: Prolific ID

prolificID

What is your Prolific ID?

Please note that this response should auto-fill with the correct ID

_____

End of Block: Prolific ID

Start of Block: Demographics

Welcome to our study!

In the main part of the study, you have to watch a **YouTube video with sound**.

Before we start with the main part of the study, please answer the questions below.

age

How old are you (in years)?

▼ 18... 99

school

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ More than master's degree

gender

What is your gender?

- ○ Male
- ○ Female
- ○ Other

---

importanceFamily

How important is family for you?

- ○ Very important
- ○ Important
- ○ Somehow important
- ○ Not very important
- ○ Not important

---

attentioncheck

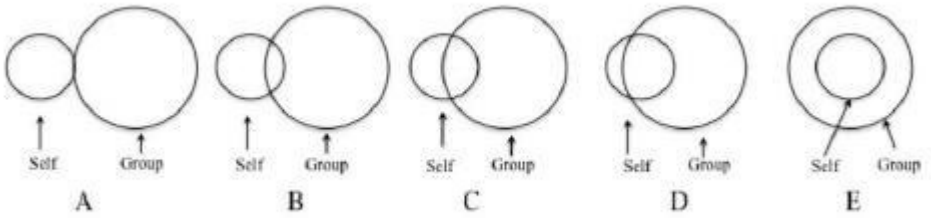
Please indicate how strongly you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It is important to me how others think about me	○	○	○	○	○
I believe that society is based on rules and everyone must follow the rules	○	○	○	○	○
It is important to pay attention in this study. Please click "Strongly agree"	○	○	○	○	○
It is important to be kind to others, even strangers	○	○	○	○	○

End of Block: Demographics

Start of Block: Outcome elicitation

Please circle the letter below the picture that best represents your relationship with this group.



fusion

Which picture describes your relationship with the following groups best right now?

	A	B	C	D	E
Humanity as a whole	○	○	○	○	○
All Americans	○	○	○	○	○
Your extended family	○	○	○	○	○
Your immediate family	○	○	○	○	○
Supporters of the Democrats	○	○	○	○	○
Supporters of the Republicans	○	○	○	○	○

Page Break

shareWorld

How would you split $100 between...

A randomly selected person who lives anywhere in the world : _____
A randomly selected person who lives in the United States : _____
Total : _____

Page Break

shareFamily

How would you split $100 between...

A member of your extended family (e.g. your cousin) : _____
A randomly selected person who lives in the United States : _____
Total : _____

Page Break

shareDem

How would you split $100 between...

A member of the Democrats : _____
A member of the Republicans : _____
Total : _____

End of Block: Outcome elicitation

Start of Block: Video

Please watch the following TED Talk from the journalist A. J. Jacobs. Please make sure to turn

on the sound and watch the talk from the beginning to the end.

When you are finished, we will ask you some questions about the talk.

[Video appears here]

You can proceed to the next page after you have watched the whole video.

End of Block: Video

Start of Block: Technical check

seeVideo

Did you see the whole video?

- ○ Yes
- ○ No

---

problemsSound

Did you encounter any problems regarding the sound?

- ○ Yes
- ○ No

---

technicalProblems

Did you encounter any technical problems?

- ○ Yes
- ○ No

End of Block: Technical check

Start of Block: Bug report

bugReport

Please describe any technical problems you encountered:

_____

End of Block: Bug report

Start of Block: Comprehension Check

comprehension1

How did A. J. Jacobs get the idea for the global family reunion?

- ○ During a chat with his wife at the breakfast table
- ○ By thinking about the world family tree
- ○ He got a flash of inspiration while feeding his cat Tommy
- ○ Because he was disappointed about his own family reunion
- ○ During his PhD studies in evolutionary biology

---

comprehension2

Based on A.J.Jacobs findings: How likely is it that you are distantly related to a famous actor or actress?

- ○ Very likely
- ○ Somewhat likely
- ○ Not very likely

End of Block: Comprehension Check

Start of Block: Thoughts on video

thoughts

What are your thoughts about the video?

_____

End of Block: Thoughts on video

Start of Block: Post outcome measures

surprised

Were you surprised by the claim in the video that we are all more or less biologically related to each other?

- ○ 1 - Not surprised at all
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7 - Very surprised

---

convinced

How convincing did you find the arguments in the video?

- ○ 1 - Not convincing at all
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7 - Very convincing

Page Break

party

Is there a political party with which you identify?

- ○ Democratic Party
- ○ Republican Party
- ○ Independents
- ○ No party expresses my views
- ○ Prefer not to answer

End of Block: Post outcome measures

Start of Block: Beliefs about purpose of study

purpose

Do you have any idea what the purpose of this study might be? If not, please leave the field empty.

_____

End of Block: Beliefs about purpose of study

Start of Block: Feedback

feedback

Optional: Do you have any feedback for us? Was anything unclear?

_____

End of Block: Feedback

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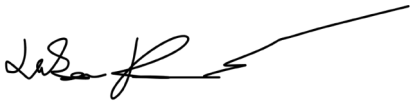

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