

# Group Image Concerns

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# Motivation

- ▶ Social image concerns are an important driver of economic and prosocial behavior
  - ▶ We care whether others think we are altruistic, civic minded, rich, intelligent... not greedy, selfish, poor, stupid...
- ▶ Because we care...
  - ▶ We tend to behave in a better (socially desirable) way when being observed.
  - ▶ We try to suppress information that reveals bad attributes.
  - ▶ We feel shame when this information is revealed nonetheless...
  - ▶ ...and pride when, instead, others think of us in a good light.
- ▶ Permeates social and economic life:
  - ▶ Charitable giving, wiggle room experiments, lying behavior, voting, consumption, workplace effort...<sup>1</sup>

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<sup>1</sup>Ariely, Bracha, Meier (2009), Dana, Weber, Kuang (2007), Abeler, Nosenzo, Raymond (2019), DellaVigna et al. (2016), Bursztyn et al. (2017), Mas and Moretti (2009), Butera et al. (2022),...

# Motivation – cont'd

- ▶ Existing research concentrates entirely on individual image concerns
  - ▶ How I am *individually* and *personally* perceived by others
- ▶ However, in many cases, what we do and how we behave, might not just reflect on ourselves personally, but also on the image of the groups we belong to:



# Motivation – cont'd

- ▶ Existing research concentrates entirely on individual image concerns
  - ▶ How I am *individually* and *personally* perceived by others
- ▶ However, in many cases, what we do and how we behave, might not just reflect on ourselves personally, but also on the image of the groups we belong to:

## England fans arrested for Nazi salutes and hotel room damage in Munich

### Here are the 50 smartest colleges in America

Rachel Premack and Jonathan Wai Updated Aug 14, 2018, 7:58 PM GMT+2



Three supporters arrested for Nazi salutes before Germany game  
ave for other incidents, including letting off flare in hotel room



## British Muslim charity breaks world record for most blood donations in a day

The event was led by Who Is Hussain, a social justice charity that worked with NHS Blood and Transplant



## Motivation – cont'd

- ▶ Group image concerns **may affect behavior and utility**:
  1. How behavior reflects on the image of the group might be an important driver of how people behave in public (vs. private) settings.
  2. Similar to how people care to reveal or conceal information about themselves, people may care to reveal or conceal positive/negative information about their group.
- ▶ In line with prominent theories of group identity:
  - ▶ E.g. Akerlof and Kranton (2000): People derive utility from being part of groups with higher social status
- ▶ While there is a lot of anecdotal/indirect evidence that this might be true, **as of now no direct evidence on the existence and size of group image concerns.**

# This project

- ▶ In this project, we set out to provide/test for such direct evidence:
  1. Clean experimental evidence on **behavior effects** of group image concerns (isolated from individual image concerns, which is difficult/nearly impossible in the field)
  2. Experimental measures for the **utility-relevance** of group image concerns using Willingness-to-Pay (money metric) measures.

## Preview: What we do

- ▶ Series of experiments using “natural” (pre-existing) group affiliations:
  1. **Lab experiment** with (German) university students
    - ▶ Group = University affiliation
  2. **Online experiments** with general (U.S.) population:
    - ▶ Groups = Religion, Political party, University affiliation
- ▶ Domain: We mostly concentrate on prosocial behavior (donations) as a proxy for a group image of “generosity”
- ▶ Online, we also study image for “intelligence” (Raven tests), and “patriotism” (knowledge of U.S. national anthem)

## Preview: What we find

### Findings (preview):

- ▶ Strong evidence of group image concerns affecting behavior (somewhat mixed for effort tasks re. intelligence/patriotism)
- ▶ Strong evidence of group image concerns being utility relevant (WTP measures; strong throughout all settings)
- ▶ Effect roughly half as strong as that of individual image concerns
- ▶ Behavior effects driven by a minority of “groupy” subjects



## Preview: What we find

- ▶ Let  $a_i$  be the output of some individual belonging to group  $G$ 
  - = Donation, Performance in intelligence task, Mistakes found in U.S. National Anthem
- ▶ Set of outputs by group  $G$ :

$$A_G = \{ a_1, a_2, \dots, a_i, \dots, a_n \}$$



Make public in the name of the group  
*"A member of group  $G$  donated  $a_i$ "*

- ▶ We show:
  1. Subjects increase  $a_i$  conditional on  $a_i$  being publicly announced in the name of the group
  2. If  $a_i$  is the output of another group member
    - ⇒ Subjects pay to withhold publication if  $a_i$  is low ("group shame")
    - ⇒ Subjects pay to make  $a_i$  public if  $a_i$  is high ("group pride")

## (Some) related literature

- ▶ We know that group identity matters
  - ▶ Conforming with group norms<sup>2</sup>
  - ▶ Group loyalty<sup>3</sup>
- ▶ Suggestive evidence that “group image” matters
  - ▶ Group status concerns<sup>4</sup>
  - ▶ Priming people on a bad image of their group increases good behavior (“image maintenance”)<sup>5</sup>
  - ▶ “Group reciprocity” and retaliation<sup>6</sup>
- ▶ Huge literature on individual image concerns

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<sup>2</sup> Akerlof and Kranton (2000, 2005), Shayo (2009), Shih et al. (1999), Austen-Smith and Fryer (2005), ...

<sup>3</sup> Tajfel studies, Chen and Li (2009), Kranton et al. (2020), Bauer et al. (2020),...

<sup>4</sup> Akerlof and Kranton (2000), Shayo (2009), Gennaioli and Tabellini (2019), Hett et al. (2020),...

<sup>5</sup> Hopkins et al. (2007), Leeuwen & Täuber (2012)

<sup>6</sup> Gaertner et al (2008), Hugh-Jones and Leroch (2017)

Laboratory experiment (U Cologne/Bonn)

# Inspiration

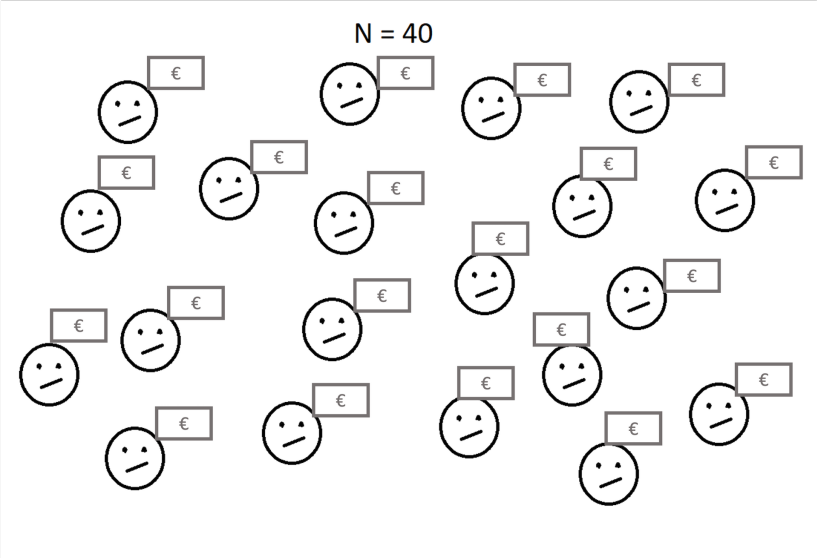


Source: reddit.com

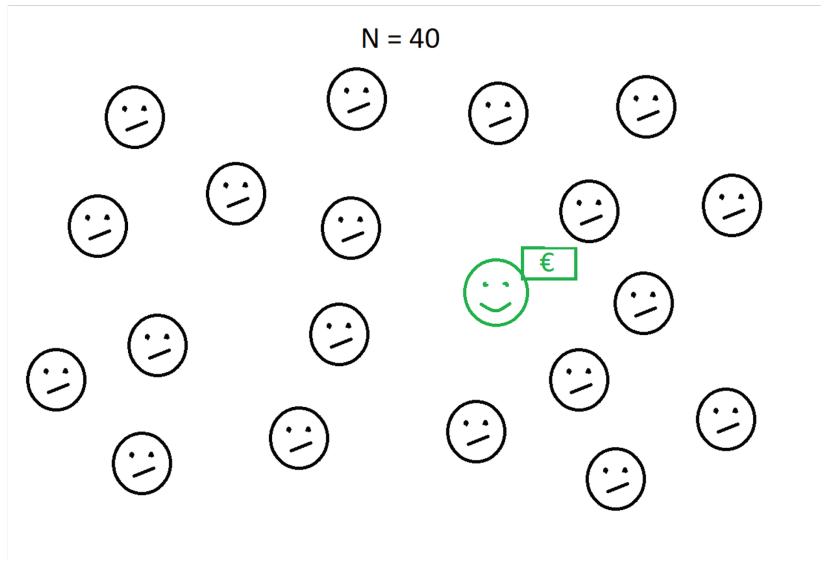
# Design in a Nutshell

- ▶ Recruit subjects from two universities (U Bonn, U Cologne)
- ▶ Group affiliation = student of U Bonn/U Cologne
- ▶ Subjects make a donation (0-200 €) to charity (German Children's Fund)
  - ▶ privately or publicly
  - ▶ individually or as group representative
- ▶ 2 measures of image concerns:
  1.  $\Delta$ Donation = Public donation – Private donation
  2. Willingness to pay for publicly announcing or keeping private individual and group donations.
- ▶ Pre-registered on AEA Registry: AEARCTR-0007749

# Everyone makes a donation decision (0-200 €)



## One donation realized at random



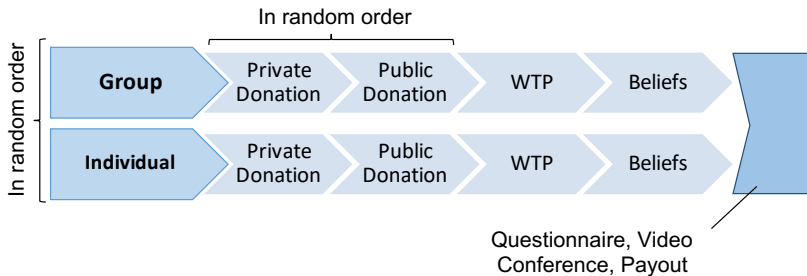
Two settings (within-subject in random order):

1. **Individual setting**

- ▶ Elicit individual image concerns

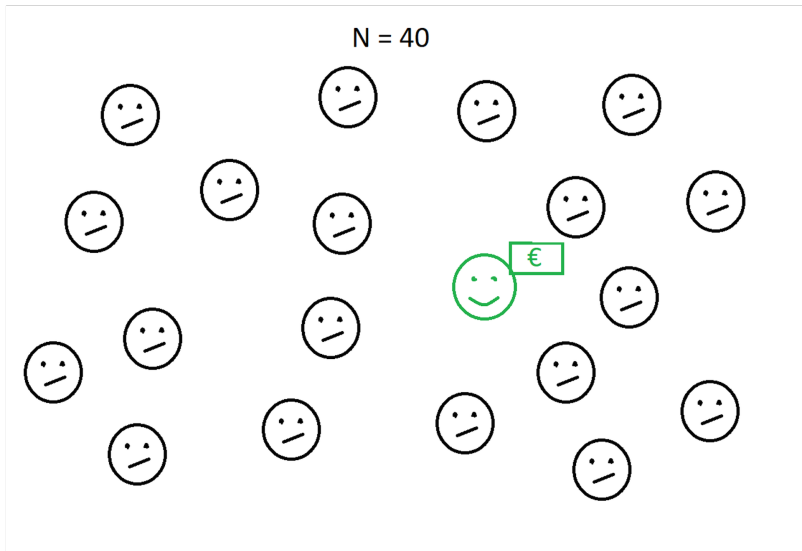
2. **Group setting**

- ▶ Elicit group image concerns





## Private Donation: Individual Setting

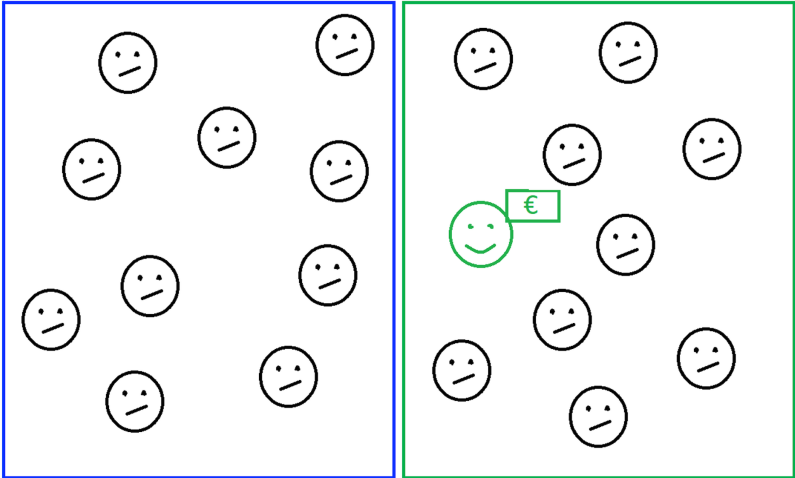


# Private Donation: Group Setting

U Bonn (N = 20)

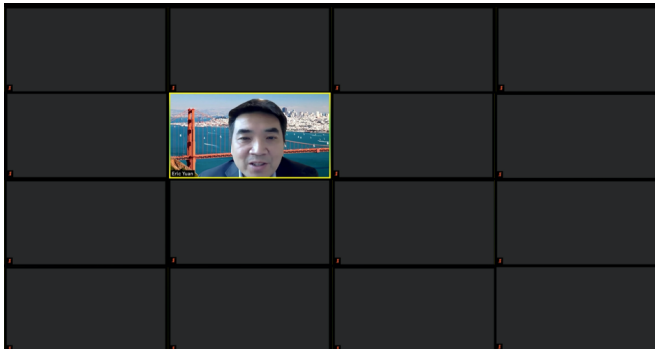
N = 40

U Cologne (N = 20)



## Public Donation: Individual Setting

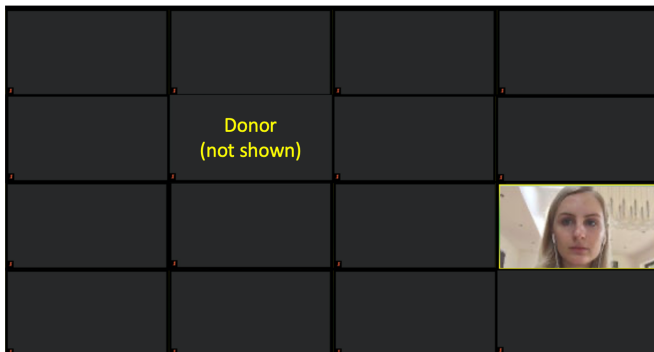
Donor reveals his individual name and his donation in a Zoom conference :



“Hi. My name is Eric. I was selected for the donation.  
My donation is 17 euros.”

## Public Donation: Group Setting

**Another group member** reveals donation **in the name of the group** in a Zoom conference:



“Hi. I am a student of the University of Cologne. Our group was selected for the donation. The donation is 17 euros.”

# Primary outcomes

## 1. Donations

- ▶  $\Delta\text{Don} = \text{Public donation} - \text{Private donation}$
- ⇒ Behavioral effect: How much better do you behave (how much more do you donate) when your (group's) image is at stake?

## 2. Willingness to pay for announcing donations

- ▶ Given that the donation is X Euro, how much do you pay for keeping the donation private / making it public ?  
  shame    pride
- ⇒ Utility associated with revealing good / bad information about yourself (the group)
- ⇒ Utility associated with manipulating your (group's) image

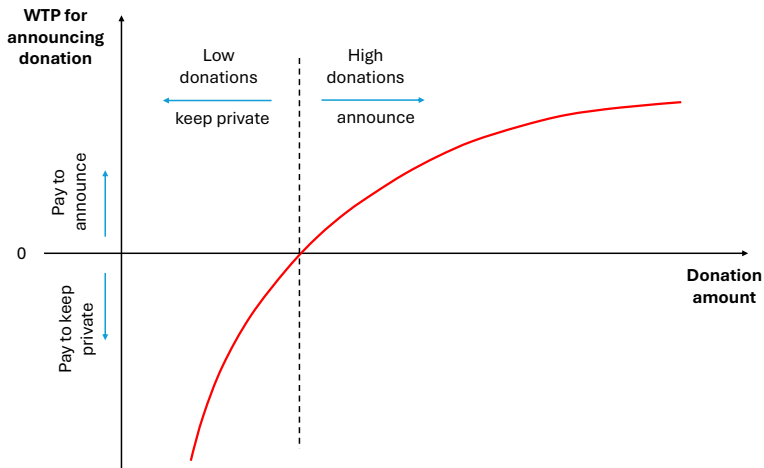
## WTP for public announcement

Donation	Announce or keep private?		WTP (€0 - 50)
€ 0	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 1 - 4	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 5 - 9	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 10 - 19	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 20 - 29	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 30 - 49	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 50 - 74	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 75 - 99	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	<input type="text"/>
€ 100 - 124	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce	<input type="text"/>
€ 125 - 149	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce	<input type="text"/>
€ 150 - 174	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce	<input type="text"/>
€ 175 - 200	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce	<input type="text"/>

- ⇒ Method: Butera, Metcalfe, Morrison, and Taubinsky (AER, 2022)
- ⇒ Determines public announcement with 10% probability. [▶ Detail](#)
- ⇒ For individual setting, donation chosen with 10% probability by the computer (randomly from [0,200]) [▶ Detail](#)

# WTP for public announcement

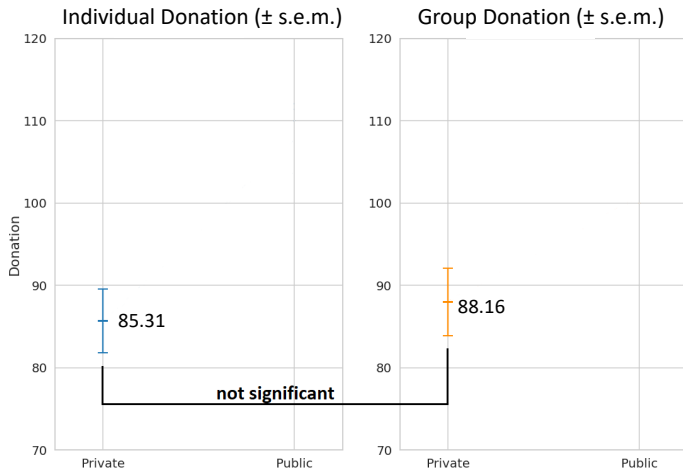
- Hypothesis: Willingness to announce increasing in donation amount



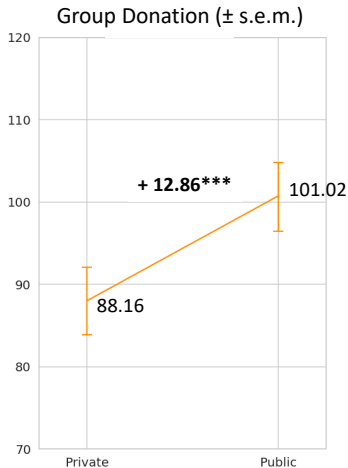
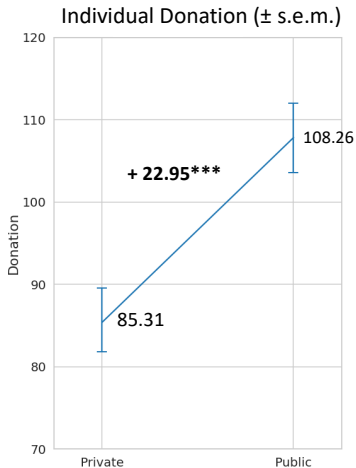
Results  
(n = 256)



# Private Donations



# Image effect: Private vs. Public Donations



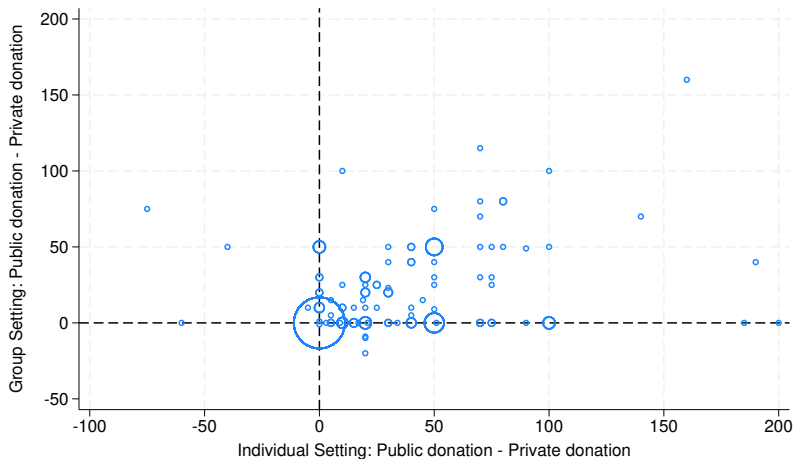
# Heterogeneity

- ▶ Average treatment effect (Public-Private) is driven by a subset of (group-) image concerned subjects:

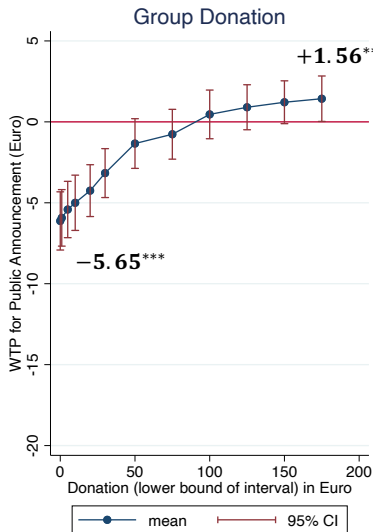
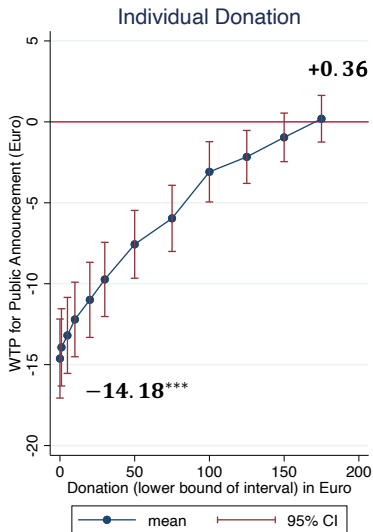
	All subjects			Subjects with $\Delta\text{Public} \neq 0$	
	$\overline{\text{Private}}$	$\overline{\text{Public}}$	$\overline{\Delta\text{Public}}$	Share	$\overline{\Delta\text{Public}}$
Individual	85.31	108.26	22.95***	51.2%	44.84***
Group	88.16	101.02	12.86***	34.8%	36.99***

Table: Mean donations and treatment differences

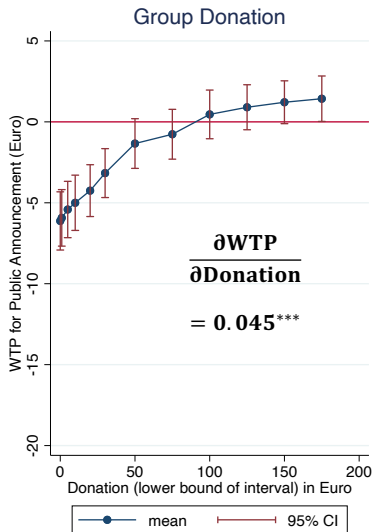
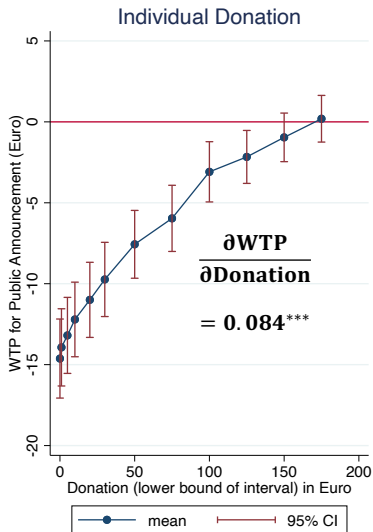
# Heterogeneity: Individual treatment differences



# WTP for public announcement



# WTP for public announcement



## Summary/Conclusion: Lab experiment

- ▶ Main findings: Evidence for the existence of group image concerns
  - ▶ Subjects behave more generously when group image is at stake ( $\Delta\text{Donation} > 0$ )
  - ▶ Subjects pay to conceal information that can harm group image (low donations), and to reveal information that can improve group image (high donations)
- ▶ Question:
  - ▶ Do these findings extend to other groups, other domains, etc.?
  - ▶ Can we get results with a leaner/survey-type public announcement? (avoiding long Zoom conferences)

Online experiments: Prolific (U.S. population)



# Design in a nutshell

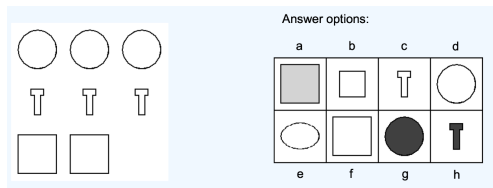
- ▶ Online experiments on Prolific with U.S. subjects (N=597)
- ▶ We repeat the group setting of our laboratory experiment using different behavioral domains and group identities
- ▶ **3 separate experiments:**
  1. Donations (“Generosity”)
    - × group identity = Religious Affiliation (Christian, Muslim,...)
  2. Performance in Raven Matrix tasks (“Intelligence”)
    - × group identity = University Affiliation (U.S. students)
  3. Finding mistakes in U.S. national anthem (“Patriotism”)
    - × group identity = Political Affiliation (Republican/Democrat)
- ▶ Pre-registered on AEA Registry: AEARCTR-0011027

# Online Experiment 1: Donations and Religious Affiliation

- ▶ Christian, Muslim, Jewish, Non-Religious
- ▶ Participants choose individual donation (US\$ 0 – 200) to Feeding America
  - ▶ private donation “on behalf of their group”
  - ▶ public donation made public in the name of their group
- ▶ Willingness to pay for making public / keeping private donations of other group members (over the entire donation range)

## Online Experiment 2: Intelligence and University Affiliation

- ▶ Active students from 141 U.S. institutions
- ▶ Participants asked to solve Raven-like matrix tasks:



- ⇒ Private treatment: Performance kept private
- ⇒ Public treatment: Performance made public in the name of group (students of a given university)
- ▶ Willingness to pay for making public / keeping private performance of other group members (over the entire performance range)

## Online Experiment 3: Patriotism and Party Affiliation

- ▶ Self-identified Democrats and Republicans
- ▶ Participants asked to correct mistakes in U.S. anthem:

Oh	say	can	you	see,	by	the	darn's	early	might,
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

- ⇒ Private treatment: Performance kept private
- ⇒ Public treatment: Performance made public in the name of group (Democrats or Republicans)
- ▶ Willingness to pay for making public / keeping private performance of other group members (over the entire performance range)

# Online experiments: Public announcements

We asked a Christian and 100 randomly selected U.S. Americans to donate to Feeding America from a \$200 budget.

**The Christian  
donated \$X.**

**The average U.S.  
American donated \$90.**

We asked a UCLA student and 100 randomly selected U.S. Americans to solve 30 tasks resembling those commonly used to measure general intelligence.

**The UCLA student  
solved X tasks correctly.**

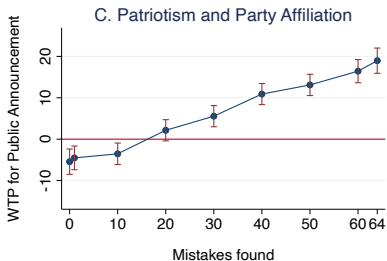
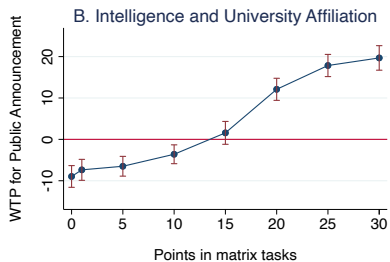
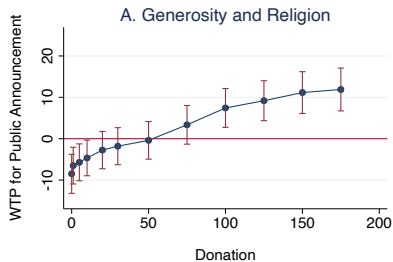
**The average U.S.  
American solved 18 tasks  
correctly.**

We asked a Democrat and 100 randomly selected U.S. Americans to find intentionally included mistakes in the U.S. national anthem, "The Star-Spangled Banner".

**The Democrat found X  
mistakes.**

**The average U.S.  
American found 26 mistakes.**

# Online experiments: WTP curves



# Online experiments: Results

- ▶ Experiment 1 (Generosity  $\times$  Religious affiliation):
  - ▶ We strongly replicate our lab results
  - ▶ 20% of subjects have  $\Delta\text{Donation} > 0$  (+\$37.75 on average)
  - ▶ Group publicity effect across all subjects +7.63\*\*\* dollars
  - ▶ WTP curves very similar
  
- ▶ Experiments 2 and 3 (Intelligence and Patriotism):
  - ▶ Modest/non-significant effects on real-effort task performance
  - ▶ Anthem: +2.32 mistakes on average (Republicans: +4.42)
  - ▶ No (significant) differences in Raven task
  - ▶ **But:** Very significant and robust effects on WTP

## Conclusion

- ▶ **Novel concept:** group image concerns
  - ⇒ People change behavior and incur costs to cultivate a positive image of their groups
- ▶ Present a **portable experimental method** to measure the existence and size of group image concerns
- ▶ Provide **evidence from several experiments** and multiple domains that group image concerns exist and importantly affect behavior and utility
- ▶ Group image concerns likely an important driver of real world behavior as well
- ▶ Hope to stimulate future research into this interesting new concept

**Thank you!**

(arno.apf@gmail.com)

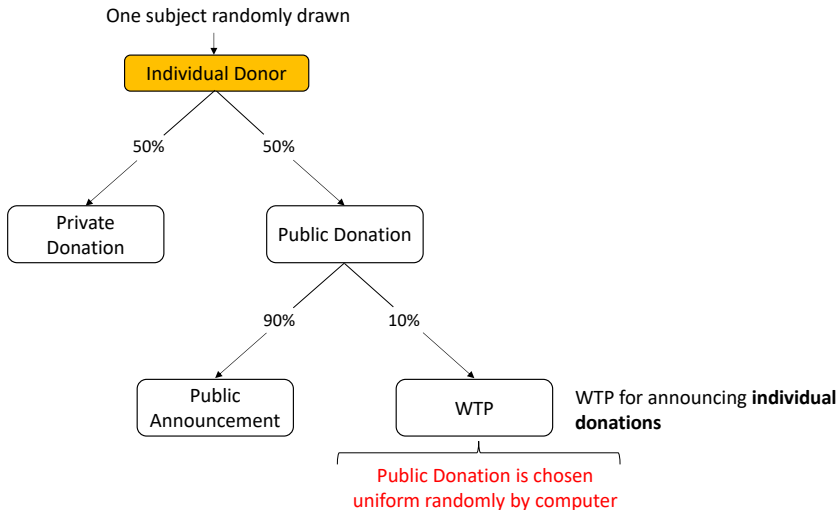


## Open questions

- ▶ Why only moderate/non-significant effects on performance in Raven and Anthem tasks?
  - ▶ Incentives weak (unconditional effort cost vs. small conditional likelihood of publication)
  - ▶ Between subject setting (reduced power)
  - ▶ Effort harder to adjust than donations (less control on the side of participants)
  - ▶ Raven measures ability instead of effort?
  - ▶ Raven: too many groups (141) for adequate control?
  - ▶ Anthem: likely a power issue (direction of effects in line with expectations, but smaller than expected)

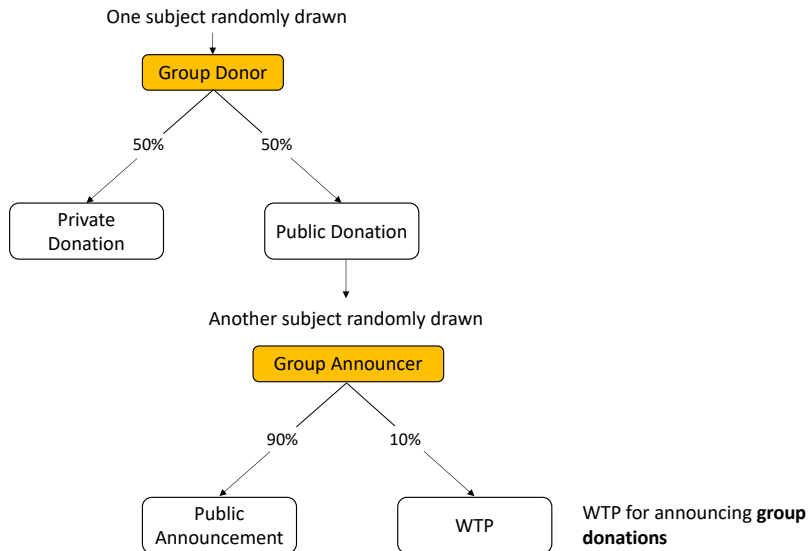
# Implementation Probabilities: Individual Setting

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# Implementation Probabilities: Group Setting

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- ▶ In the **individual setting**, WTP measures willingness to publicly announce donations in one's own name.
  - ⇒ Shame/pride of being personally associated with low/high donations.
- ▶ In the **group setting**, WTP measures willingness to publicly announce donations of others in the name of the group.
  - ⇒ Shame/pride of the group being associated with low/high donations.
- ▶ Common hypothesis:  $\partial WTP / \partial \text{donation} > 0$

# WTP: Incentive compatibility [▶▶ Back to main](#)

Adapted from Butera et al. (2022):

- ▶ **Step 1:** Binary preference:

Donation	Announce or keep private?	
€ 0	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce
€ 1 - 4	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce
...	...	...
€ 175 - 200	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce

→ Choice in this step is implemented with probability 50%

# WTP: Incentive compatibility [▶▶ Back to main](#)

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...	...	...
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→ Choice in this step is implemented with probability 50%

- ▶ **Step 2:** WTP (€ 0-50) to implement preference

Donation	Your preference		WTP €0 - 50	
€ 0	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	€	30
€ 1 - 4	<input checked="" type="radio"/> Keep private	<input type="radio"/> Announce	€	20
...	...	...	...	
€ 175 - 200	<input type="radio"/> Keep private	<input checked="" type="radio"/> Announce	€	5

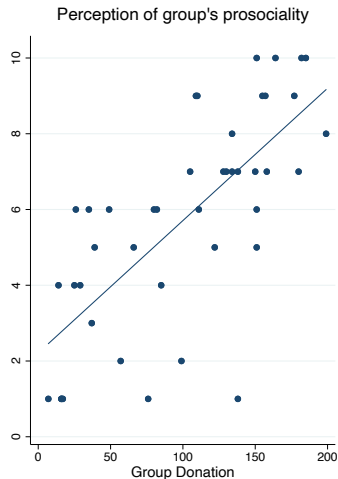
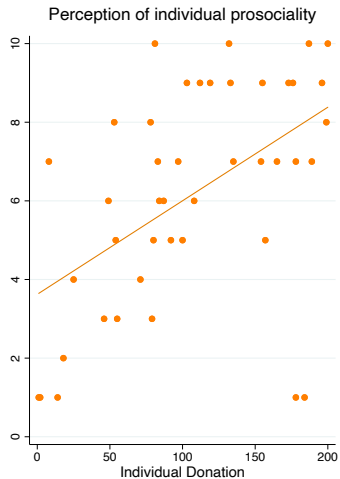
→ WTP in this step determines announcement with 50%:

Standard BDM (computer draws random number  $x \in [0, 50]$ )

→ Each Euro increases probability by 1 p.p. (50% + WTP)

# Questionnaire responses: Relationship of donation and perceived prosociality of individual/group

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## Modeling group image concerns [▶ Back to main](#)

For  $i \in G$ , and some output measure  $a_i$  (donation, performance, etc.)

$$U_i^G = y_i + u_i(a_i) + \alpha_i^G \cdot v_G(\tilde{A}_G)$$

where

- ▶  $y_i = i$ 's income
- ▶  $u_i(a_i) = i$ 's intrinsic utility regarding output  $a_i$
- ▶  $\alpha_i^G \in \mathbb{R} =$  group image concern of  $i$
- ▶  $v_G(\tilde{A}_G) =$  public image of group  $G$
- ▶  $\tilde{A}_G = \{\tilde{a}_j \mid j \in G\} =$  set of (expected) outputs of group  $G$
- ▶  $\partial v(\tilde{A}_G) / \partial \tilde{a}_j > 0$  for all  $j \in G$



## Modeling group image concerns [▶ Back to main](#)

In the paper,

$$v_G(\tilde{A}_G) = \sum_{j \in G} \tilde{a}_j$$

such that

$$U_i^G = y_i + u_i(a_i) + \alpha_i^G \cdot \sum_{j \in G} \tilde{a}_j$$

Note that (trivially)

$$\sum_{j \in G} \tilde{a}_j = |G| \cdot \sum_{j \in G} \frac{\tilde{a}_j}{|G|}$$

i.e., caring about the sum of outputs is identical to carrying about how the average output affects the reputation of all agents in group  $G$ .

## Modeling group image concerns [▶ Back to main](#)

In the experiments, we compare situations

- ▶ Private: nothing is revealed
- ▶ Public: output of one agent  $j \in G$  is revealed

For the choice of  $a_i$ :

- ▶ Private:  $U_i^G = y_i + u_i(a_i) + \alpha_i^G \cdot \sum_{j \in G} \mathbb{E}[a_j]$
- ▶ Public:  $U_i^G = y_i + u_i(a_i) + \alpha_i^G \cdot (a_i + \sum_{j \in G \setminus \{i\}} \mathbb{E}[a_j | a_i])$   
 $\Rightarrow$  If  $\alpha_i^G > 0$ ,  $a_i(\text{Public}) > a_i(\text{Private})$

For WTP:

- ▶  $\alpha_i^G \cdot v_G(\tilde{A}_G | a_k \text{ is revealed}) - \alpha_i^G \cdot v_G(\tilde{A}_G | \text{nothing is revealed})$   
 $= \alpha_i^G \cdot [(a_k - \mathbb{E}[a_j]) + \sum_{j \in G \setminus \{k\}} (\mathbb{E}[a_j | a_k] - \mathbb{E}[a_j])]$   
 $\Rightarrow$  Negative if  $a_k < \mathbb{E}[a_j]$ , positive if  $a_k > \mathbb{E}[a_j]$

## Modeling group image concerns - Large groups

- ▶ With large groups,  $\sum_{j \in G} \tilde{a}_j$  will become arbitrarily large
  - ⇒ Assumption that individual internalizes this sum in her utility function may be psychologically undesirable
- ▶ Alternative modeling approach in this case:

$$U_i^G = y_i + u_i(a_i) + \alpha_i^G \cdot \left[ v_G(\tilde{A}_G^{a_1}) - v_G(\tilde{A}_G^0) \right]$$

- ⇒ Individual  $i$  cares directly about the *change* in group image that her actions entail, relative to the benchmark of not revealing any information.
- ⇒ Similar to how Kaufmann, Andre, and Köszegi (QJE, 2024) model socially responsible consumers who care about externalities (e.g. CO2 emissions) associated with their consumption choices