

# LEVELING UP?

## AN INTER-NEIGHBORHOOD EXPERIMENT ON PAROCHIALISM AND THE EFFICIENCY OF MULTI- LEVEL PUBLIC GOODS PROVISION

Carlo Gallier<sup>a</sup>, Timo Goeschl<sup>b</sup>, Martin Kesternich<sup>a</sup>, Johannes Lohse<sup>c</sup>,  
Christiane Reif<sup>a</sup>, Daniel Römer<sup>a</sup>

<sup>a</sup>*ZEW Mannheim*, <sup>b</sup>*Heidelberg University*, <sup>c</sup>*University of  
Birmingham*

# Multi-level Public Goods: The Level Problem

Similar public good, but different scales: How much to provide at different levels (i.e. spatial scales)?

- Public Radio

Should I give more to



and less to



?

- Conservation

Should I give more support to



or



?

# Multi-level Public Goods: The Scale Problem

Similar public good, but different scales: How much to provide at different levels (i.e. spatial scales)?

- Climate change mitigation

Should I give more to local adaptation

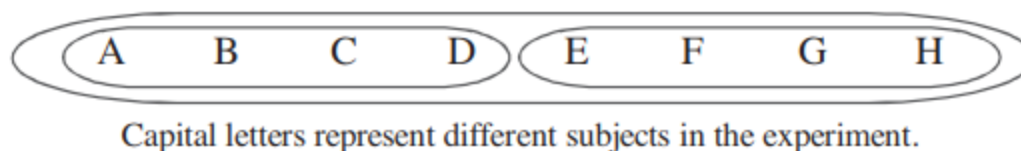
and less to global mitigation



?

# The multi-level PGG (ML-PGG)

- Extension of the standard PGG to understand more about individual behavior in the scale problem
  - Wachsman 2002, Wit and Kerr 2002, Blackwell and McKee 2003, Buchan et al. 2009, Güth and Sääksvuori 2012, Fellner and Lünser 2014; Chakravarty and Fonseca 2016
- Unifying feature: **Nested** structure of social dilemmas
  - More PG in a smaller group ('local' scale) or in a larger group
  - All the smaller groups are fully contained within a larger group.



**Fig. 1.** Group composition with two local and one global group.

- Differentiates the ML-PGG from other extensions of the standard PGG to multiple PGs
  - e.g. Cherry and Dickinson 2008, Falk et al. 2013, McCarter et al. 2014
- Allows the scale problem to be captured by design

# Parochialism and the scale problem

- What if subjects weigh the positive externalities of their contributions differently depending on whom they fall?
- One manifestation: Parochialism
  - Narrow concern for local (group) outcomes
  - Favoring one's own group, possible at the expense of efficiency gains from economies of scale
  - One possible consequence of social identity or group attachment (Akerlof and Kranton 2000)
- In-group favoritism and out-group discrimination as consequences of shared social identity through a group

THE  
QUARTERLY JOURNAL  
OF ECONOMICS

Vol. CXV

August 2000

Issue 3

ECONOMICS AND IDENTITY\*

GEORGE A. AKERLOF AND RACHEL E. KRANTON

# Parochialism and the scale problem

- **Examples** generated in standard PGGs with “minimal” groups
  - Tajfel and Turner, 1979; Bernhard et al., 2006; Chen and Li, 2009.
- **Consistent** demonstration for **naturally grown** social identity (Charness et al. 2007; Goette et al. 2006) with often significant efficiency losses
  - E.g. Bernhard et al. 2006; Ruffle and Sosis 2006
- Question: How does parochialism play out in the ML-PGG? Do subjects give more locally? And, more importantly, do they ‘level up’ in response to productivity changes?
- Importance: Efficiency penalty of parochialism when PG exhibit economies of scale (Duncombe and Yinger 1993, Reingewertz 2012)
- Unclear because of **nested** architecture
  - ML-PGG has no out-group, but more than one in-group.
- Social identity could, but need not
  - affect PG contributions in such a setting
  - create a conflict between parochialism and efficiency

# This paper

- Build on previous ML-PGG experiments to investigate the presence and magnitude of the 'leveling up' effect
- Artefactual field experiment naturally suited for parochialism to manifest itself
- Attachment to naturally grown groups at a local scale, but not at a higher level.
  - Choice of providing the PG both at the level of subjects' own neighborhood and at the level of the subjects' region of residence.
- Neighborhood: distinguished history in the literature as an identifier of attachment to a naturally grown group.
  - Social psychology and sociology (Lewicka 2011)
  - Used in economics to investigate parochialism in trust relationships (Falk and Zehnder 2013, Meier et al. 2013), PG provision (Marschall 1997), and social dilemmas in general (Falk et al. 2013).
  - Suits explicitly spatial nature of the ML-PG provision problem in our experimental implementation.
  - Political entities => Direct connection to public decision-making in the real world.
  - Contrast with region, the other scale of PG provision
    - Abstract (Tuan 1975), spatially fuzzy (Laczko 2005), and imposed from above (Paasi 2003)

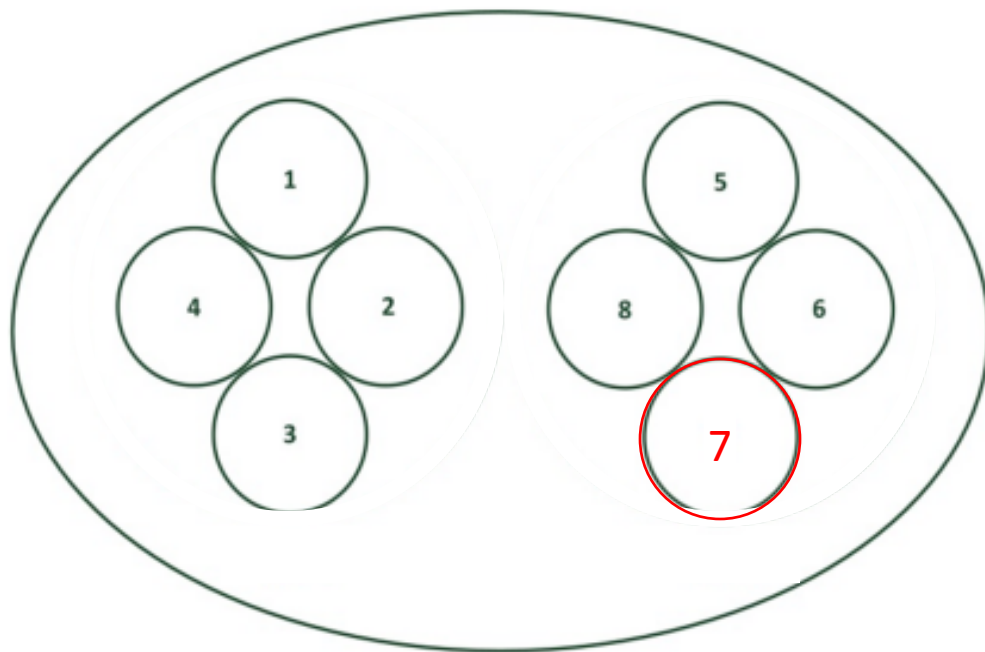
# Contributions

- Three novel elements
  - Neighborhood-within-a-region setting favorable to parochialism
    - Naturally grown identity rather than anonymous or minimal groups
  - Two-by-two design (MPCR **and** awareness of shared neighborhood) rather than
    - Only MPCR variation (B&M2003, F&L2014, C&F2016)
    - Only group salience variation at constant MPCR (C&F2016)
    - Only natural variation in place attachment (Buchan et al. 2009)
  - Design variation that allows neutralizing possible price effect confound
    - MPCR confound
- Key result: **Evidence for parochialism, but no evidence that the average subject fails to “level up”**
  - No interaction effect between awareness of shared neighborhood and MPCR
- Robust towards
  - Home-grown heterogeneity in neighborhood attachment (local patriots)
  - Induced subjects heterogeneity in neighborhood attachment
  - Constant price of giving



# Design & Hypotheses

# Design – Stage 1



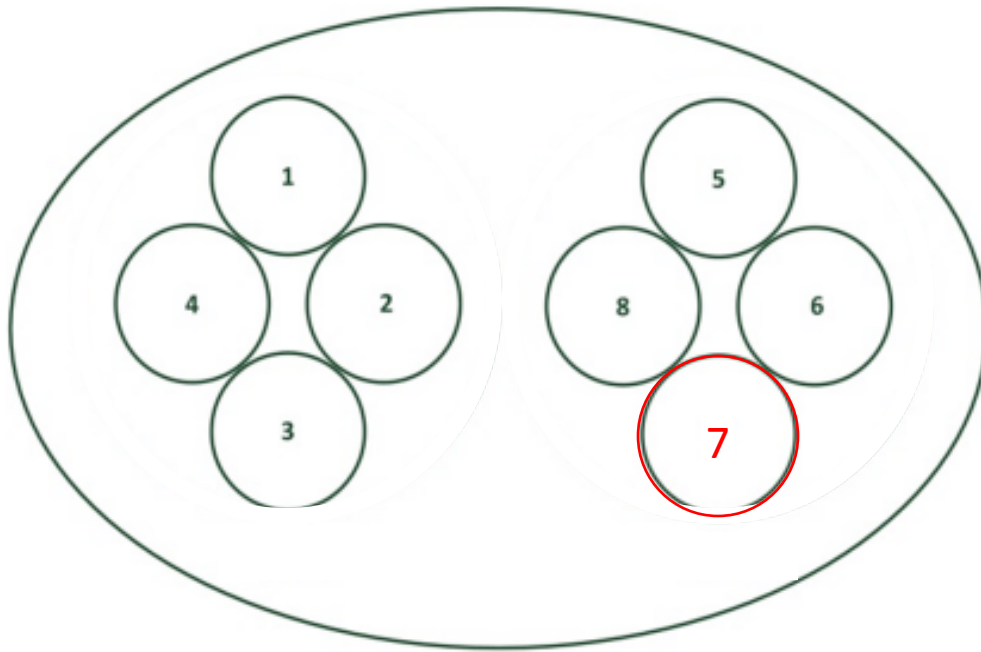
## Identity Treatment:

- Treatment **LABEL**: Discloses that members of the small club hail from the same neighborhood as the subject, and those of the larger group from the same region.
- Treatment **NO LABEL**: Relative locations not disclosed (“...further participants...”)

Task (e.g. for subject 7): Distribute 8 Euros over three different accounts:

- Private account: Provides benefits only to the participant himself
- R account: Provides benefits for all 8 members of the full group
- L account: Provides benefits exclusively for the 4 members of the smaller club

# Design – Stage 1



## Identity Treatment:

- Treatment **LABEL**: Discloses that members of the small club hail from the same neighborhood as the subject, and those of the larger group from the same region.
- Treatment **NO LABEL**: Relative locations not disclosed (“...further participants...”)

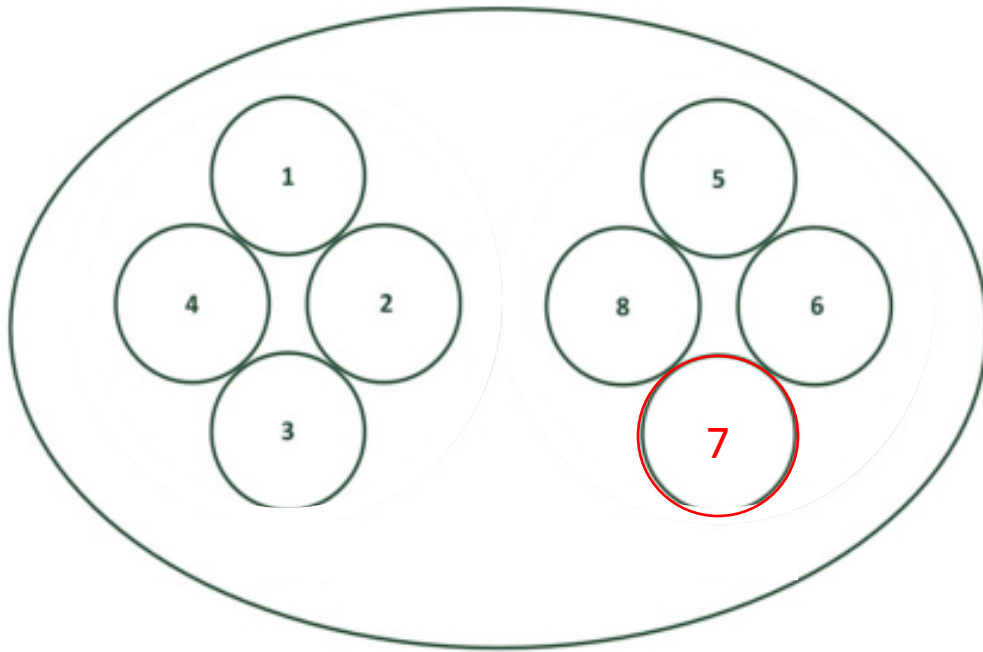
## MPCR Treatment

Treatment **LOW**: MPCR of L account is 0.5, MPCR of R account is 0.25

- Local: €1 generates  $4 \times €0.5 = €2$
- Regional: €1 generates  $8 \times €0.25 = €2$

Total benefits are identical  
Price is different

# Design – Stage 1



## Identity Treatment:

- Treatment **LABEL**: Discloses that members of the small club hail from the same neighborhood as the subject, and those of the larger group from the same region.
- Treatment **NO LABEL**: Relative locations not disclosed (“...further participants...”)

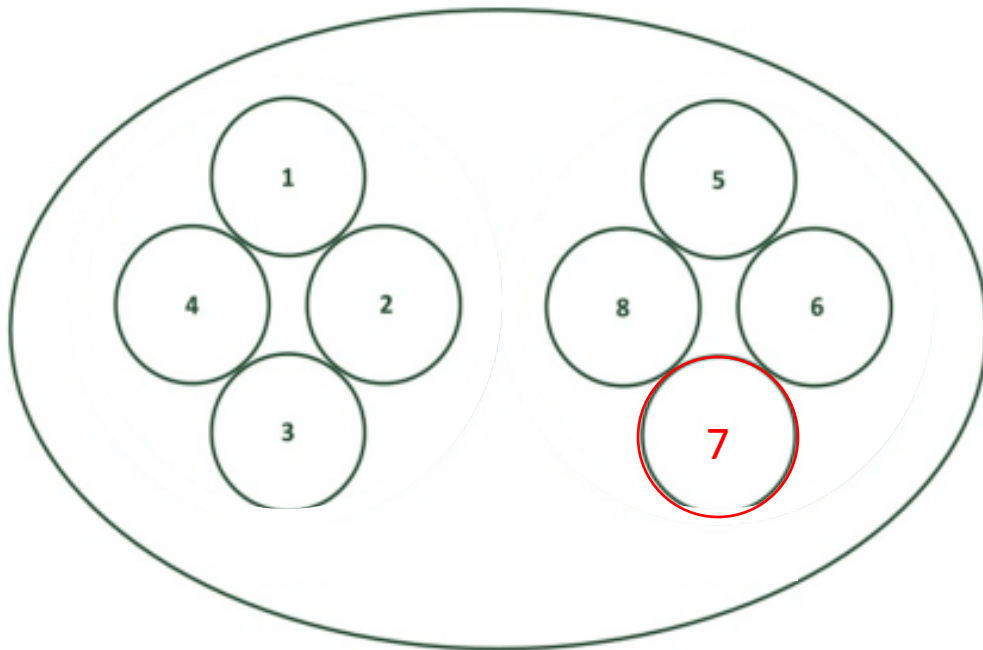
## MPCR Treatment

Treatment **HIGH**: MPCR for both accounts is 0.5

- Local: €1 generates  $4 \times €0.5 = €2$
- Regional: €1 generates  $8 \times €0.5 = €4$

Total benefits are different  
Price is same

# Design – Stage 1



## Identity Treatment:

- Treatment **LABEL**: Discloses that members of the small club hail from the same neighborhood as the subject, and those of the larger group from the same region.
- Treatment **NO LABEL**: Relative locations not disclosed (“...further participants...”)

## MPCR Treatment

Treatment **MIX**: R account provides greater benefits to non-locals

- Local: €1 generates  $4 \times €0.5 = €2$
- Regional: €1 generates  $4 \times €0.25$  (local)  
plus  $4 \times €0.75$  (regional) = €4

Total benefits are different  
Price is different

# Design – Stage 1: Treatments 2 x 3

**Table 1: Experimental Design, Stage 1 – Summary**

Treatment	Local Public Good (LPG)			Regional Public Good (RPG)		
	#	$\alpha^l$	TB <sup>l</sup>	#	$\alpha^r$	TB <sup>r</sup>
LOW – NOLABEL	4	0.5	2	8	0.25	2
LOW – LABEL	4	0.5	2	8	0.25	2
HIGH – NOLABEL	4	0.5	2	8	0.5	4
HIGH – LABEL	4	0.5	2	8	0.5	4
MIX - NOLABEL	4	0.25	2	8	0.25 for $j \in L_i$ 0.75 for $j \in L_{-i}$	4
MIX - LABEL	4	0.25	2	8	0.25 for $j \in L_i$ 0.75 for $j \in L_{-i}$	4

- Stage 2
  - Questionnaire with questions about place attachment
  - Randomly assigned to priming treatment

# Hypotheses 1 and 2

**Hypothesis 1 (positive MPCR effect):** *Average contributions to the regional public good will be higher in the HIGH MPCR treatments compared to the LOW MPCR treatments.*

- Would validate previous ML-PGG evidence of Blackwell and McKee (2003, minimal groups) and Fellner and Lünser (2014, anonymous groups).

**Hypothesis 2 ('leveling up'):** *The interaction effect between the MPCR treatment and the LABEL treatment is predicted to be negative: Relative to subjects without knowledge of their group composition, subjects aware that the local public good benefits exclusively their neighbors level up less when the MPCR of the regional public good increases.*

- Prediction: Relative to anonymous setting, subjects aware of shared local neighborhood affiliation attach greater weight to local outcomes (Bernhard et al. 2006) => greater inclination not to 'level up' when the MPCR for the regional good increases.
- Clean diff-in-diff test

# Hypotheses 3 and 4

- Add robustness by exploiting preexisting heterogeneities among subjects w.r.t. strength of group attachment
  - Home-grown group attachment
  - Priming for group attachment
- **Hypothesis 3 (local patriots):** *The negative interaction effect between the MPCR treatment and the LABEL treatment is predicted to be greater in absolute terms for subjects who articulate high concern for members of their neighborhood compared to those who articulate low concern: “Local patriots” are more inclined than others to ‘level up’ less when the MPCR of the regional public good increases*
- **Hypothesis 4 (priming effect):** *The negative interaction effect between the MPCR treatment and the LABEL treatment is predicted to be greater in absolute terms for subjects who are primed for the local group compared to those who are primed towards the regional group: Locally primed subjects are more inclined than others to ‘level up’ less when the MPCR of the regional public good increases.*



# Hypotheses 5

- Add robustness through treatment eliminating price effect (Andreoni and Miller 2002)

**Hypothesis 5 (*constant price effect*):** *The interaction effect between the MIX treatment (relative to the LOW condition) and the LABEL treatment is the same as the interaction effect established when testing hypothesis 2: There is no change in the interaction effect when holding the price of giving constant while doubling the total benefits of giving to the regional public good.*

Procedures

# Recruitment

- 12.000 invitation letters distributed to random households
  - 3000 per neighborhood
- Started recruitment: June 8th 2015
  - End: June 12th 2015
- Start experiment: June 8th 2015
  - End: June 23rd 2015
- Stopping rule: When experimental budget ran out
- Close treatments one-by-one when last full group of four was reached in each neighborhood.



UNIVERSITÄT  
HEIDELBERG  
ZUKUNFT  
SEIT 1386

**ZEW**  
Zentrum für Europäische  
Wirtschaftsforschung GmbH

## Wer steht hinter der Studie?

Die Studie ist Teil eines gemeinsamen Forschungsvorhabens der Ruprecht-Karls-Universität in Heidelberg und des Zentrum für Europäische Wirtschaftsforschung (ZEW) in Mannheim. Die Universität Heidelberg ist eine öffentliche Lehr- und Forschungseinrichtung des Landes Baden-Württemberg. Das ZEW ist ein gemeinnütziges Forschungsinstitut und Mitglied der Leibniz Wissenschaftsgemeinschaft. Finanziert wird das Forschungsvorhaben vom Bundesministerium für Bildung und Forschung.

## Wie kann ich teilnehmen?

Sie können ab sofort bis spätestens 28.06.2015 teilnehmen (solange die maximale Teilnehmerzahl noch nicht erreicht ist). Sie benötigen dazu lediglich ein Gerät (z.B. Computer, Laptop, Tablet oder Smartphone) mit Internetanschluss und Internetbrowser (z.B. Internet Explorer, Firefox, Safari, Chrome).

- Computer/Laptop: Um sich anzumelden, geben Sie [www.zew.de/umfrage2015](http://www.zew.de/umfrage2015) in die Adresszeile Ihres Internetbrowsers ein. So gelangen Sie auf den Startbildschirm. Auf diesem geben Sie Ihren persönlichen Zugangsschlüssel ein. Den Zugangsschlüssel entnehmen Sie bitte der ersten Seite des Einladungsschreibens. Dieser Zugangsschlüssel ermöglicht Ihnen eine einmalige Teilnahme. Ihre Onlinebefragung beginnt sofort nach der Eingabe.
- Tablet/Smartphone: Um sich anzumelden, geben Sie [www.zew.de/umfrage2015](http://www.zew.de/umfrage2015) in die Adresszeile Ihres Internetbrowsers ein. Alternativ können Sie auch den QR-Code neben diesem Absatz mit einer entsprechenden App auslesen. Auf beiden Wegen gelangen Sie auf den Startbildschirm. Auf diesem geben Sie Ihren persönlichen Zugangsschlüssel ein. Den Zugangsschlüssel entnehmen Sie bitte der ersten Seite des Einladungsschreibens. Dieser Zugangsschlüssel ermöglicht Ihnen eine einmalige Teilnahme. Ihre Onlinebefragung beginnt sofort nach der Eingabe.



## Was passiert mit meinen Daten?

Ihre Angaben werden ausschließlich für wissenschaftliche Zwecke verwendet und in anonymisierter Form ausgewertet. Ihre persönlichen Angaben werden ausschließlich dazu genutzt, Ihnen Ihre Aufwandsentschädigung zu übermitteln und werden nicht mit den Angaben in der Befragung in Verbindung gebracht oder an Dritte weitergegeben.

## Wie ermittelt sich meine Teilnahmevergütung?

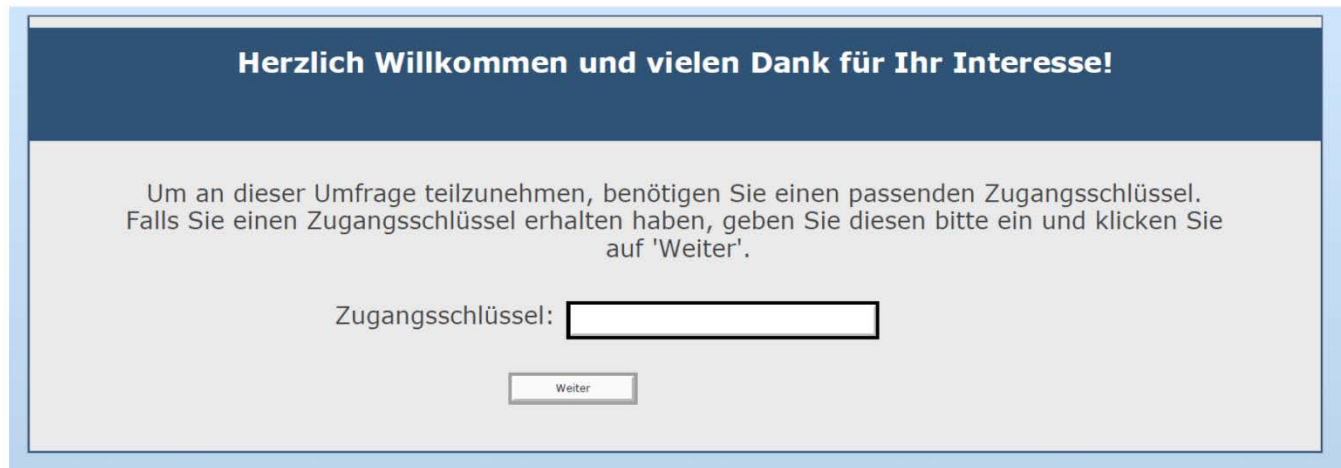
Als Teilnahmevergütung erhalten Sie sowohl eine Teilnahmeentschädigung als auch eine zusätzliche Vergütung. Die Entschädigung im Wert von 5 Euro erhalten Sie für Ihre Teilnahme in jedem Fall. Die darüber hinaus gehende zusätzliche Vergütung hängt in ihrem Wert sowohl von Ihren eigenen Entscheidungen als auch von denen anderer Teilnehmer ab.

## Wie erhalte ich meine Teilnahmevergütung?

Um Ihnen eine Teilnahmevergütung ohne Angabe Ihrer Bankdaten ermöglichen zu können, erhalten Sie ca. 4 Wochen nach Ihrer Teilnahme einen Einkaufsgutschein per Post. Die Höhe des Gutscheins entspricht Ihrer gesamten Teilnahmevergütung (Teilnahmeentschädigung von 5 Euro plus zusätzliche Vergütung). Den Gutschein können Sie in einer Vielzahl von lokalen Geschäften und Online-Shops benutzen, um Ihre Einkäufe zu bezahlen (z. B. Galeria Kaufhof, Karstadt, Media Markt, Saturn – die volle Liste der den Gutschein akzeptierenden Geschäfte entnehmen Sie bitte dieser Website: <http://www.edenred.de/produkte/ticket-shopping-card/akzeptanzpartner.html>)

# Recruitment

- Individual access-code
- Neighborhood specific identifier



The image shows a recruitment form with a dark blue header and a light gray body. The header contains the text 'Herzlich Willkommen und vielen Dank für Ihr Interesse!'. The body contains instructions in German about participating in a survey and entering an access key. Below the instructions is a text input field for the access key, preceded by the label 'Zugangsschlüssel:'. At the bottom center of the form is a button labeled 'Weiter'.

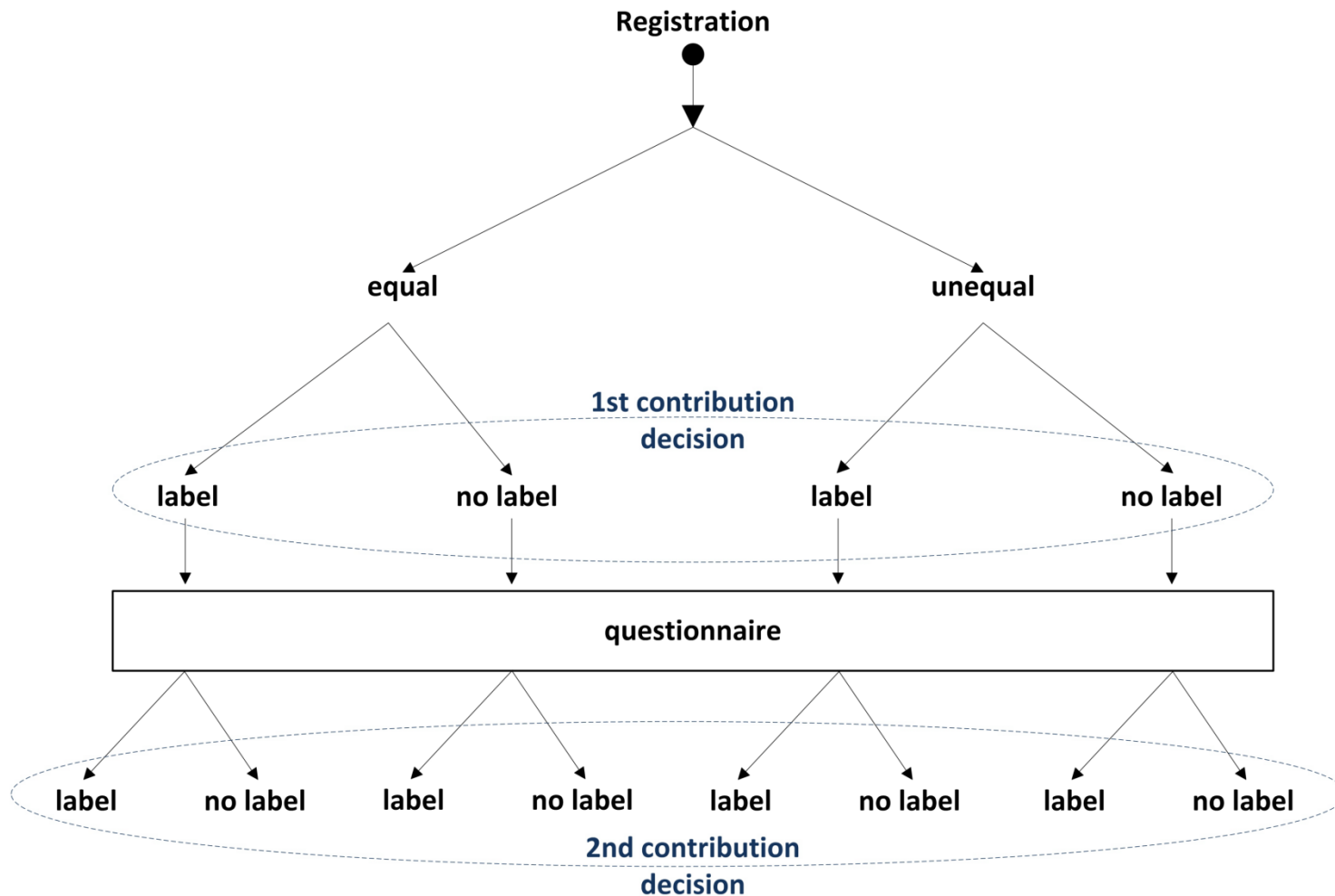
**Herzlich Willkommen und vielen Dank für Ihr Interesse!**

Um an dieser Umfrage teilzunehmen, benötigen Sie einen passenden Zugangsschlüssel.  
Falls Sie einen Zugangsschlüssel erhalten haben, geben Sie diesen bitte ein und klicken Sie auf 'Weiter'.

Zugangsschlüssel:

# Recruitment: Random assignment

- Each arrow represents a between-subjects randomization



# Payment

- Ex-post group matching
- Ex-ante information about payment procedure
- Payments in the form of a shopping voucher (Edenred Ticket shopping card), usable at gas stations, retail, and online sites
- Allows anonymous payment
  - No need for account info etc.
- Mean payoff: €18
  - Median: €17, max: €38, min: €6



# Sample characteristics

	<b>Total</b>	<b>Heidelberg</b>		<b>Mannheim</b>	
		Bahnstadt	Neuenheim	Feudenheim	Schwetz. Stadt
# part.	616	146	177	109	184
Øage	35.6	29.0	38.1	47.2	31.5
Øfemale	0.46	0.48	0.49	0.43	0.43
Øincome	2,087	2,027	2,117	2,550	1,832
Øeduc	14.8	14.4	15.4	14.3	15.0
Øyears_region	17.5	7.4	19.5	35.2	13.2
Øyears_neigh	8.9	1.6	10.8	20.6	5.9
Ølocal	3.6	3.5	3.5	4	3.4
Ømetro	3.2	3	3.1	3.7	3.3

## Confirm place attachment literature

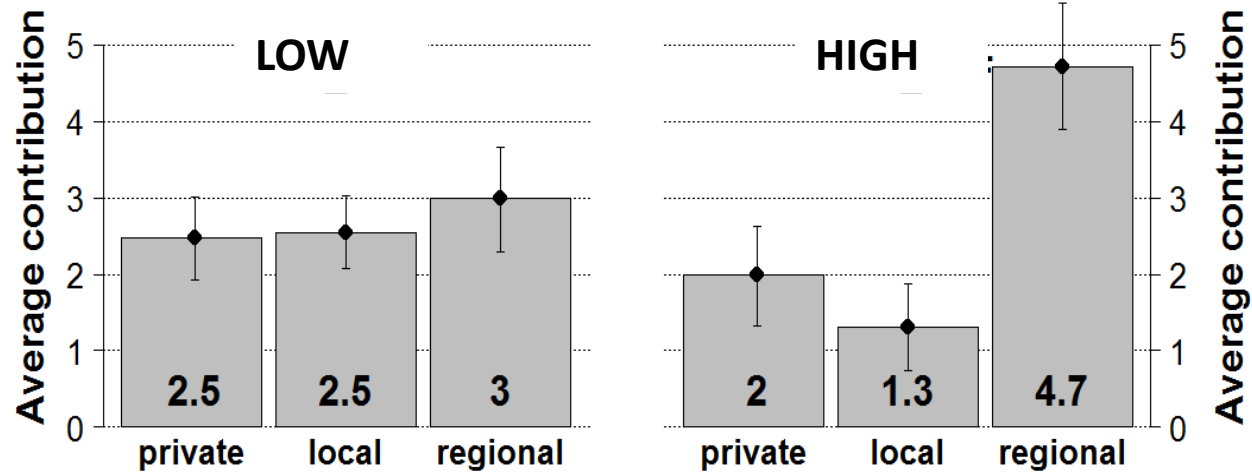
- On average subjects identify more strongly with their own neighborhood than with the region
- Identification with the own neighborhood is positively correlated with time spent living there ( $\rho=0.365$ ;  $p=0.00$ )

# Results

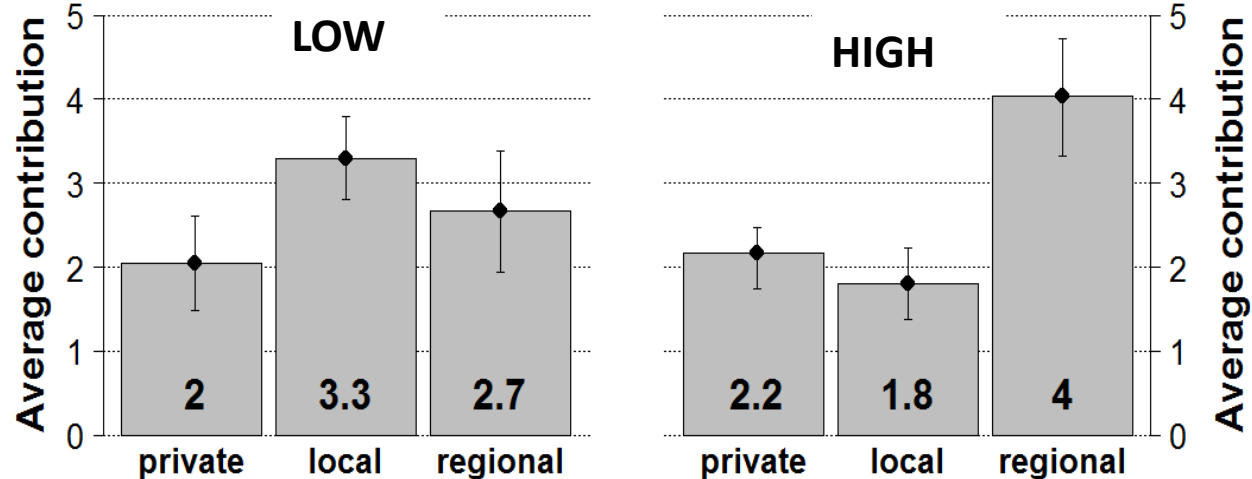


# Average contributions, full sample

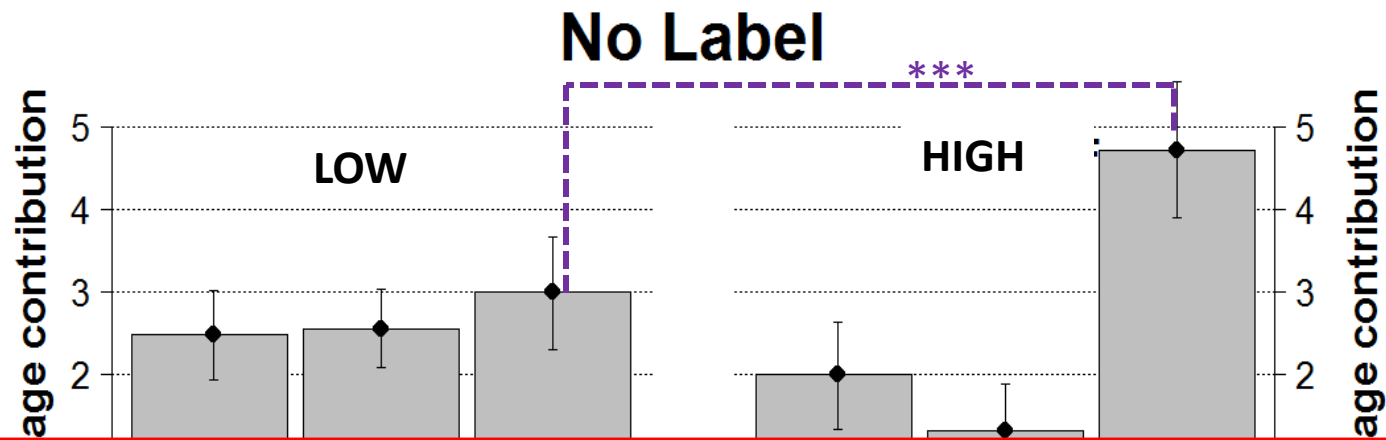
## No Label



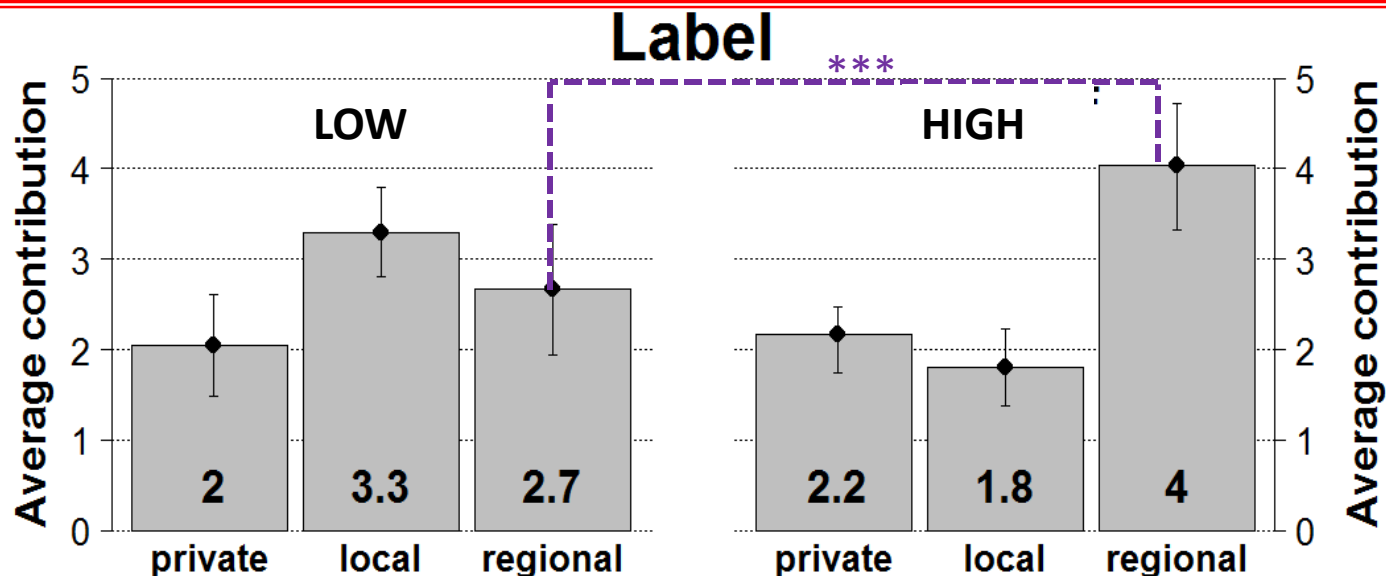
## Label



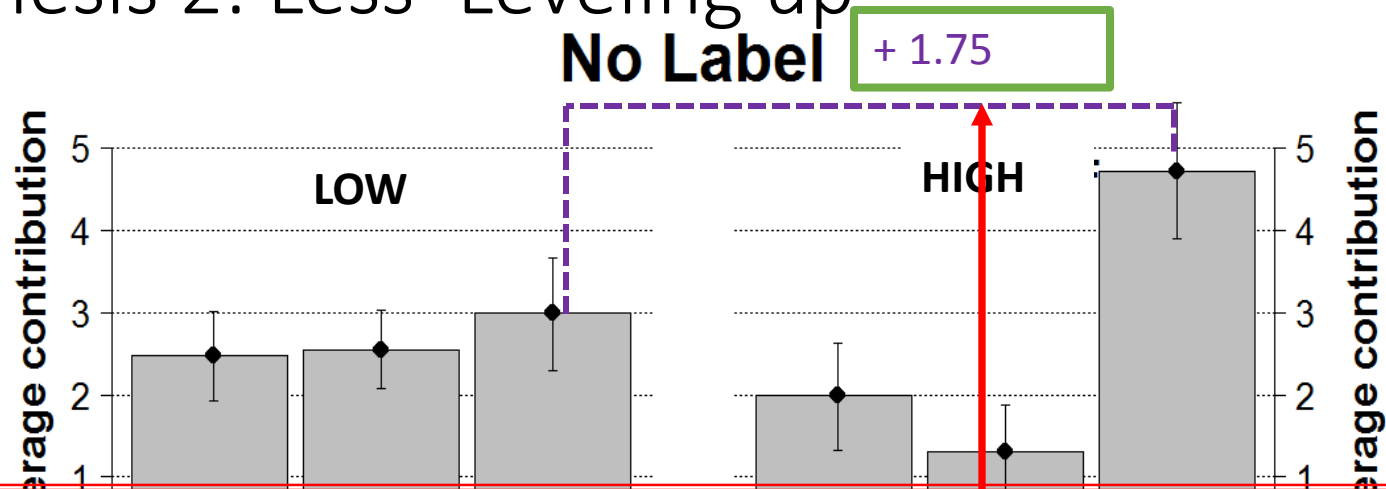
# Hypothesis 1: MPCR effect



**Result 1 (positive average MPCR effect):** *Average contributions to the regional public good are significantly higher in the HIGH MPCR treatment compared to the LOW MPCR treatment.*

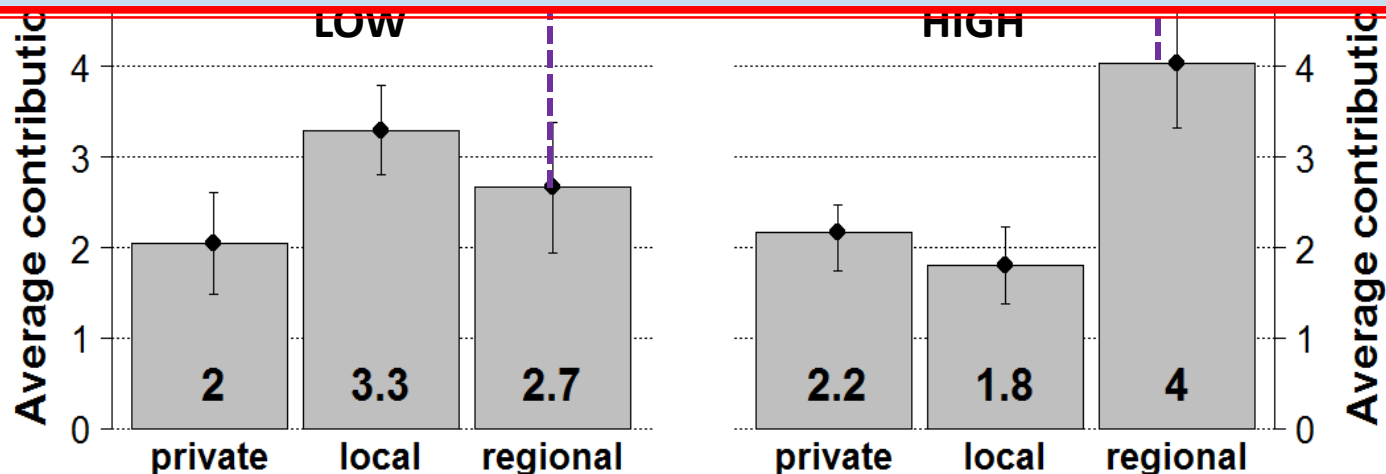


## Hypothesis 2: Less 'Leveling up'



**Result 2 ( 'leveling up' ): *There is no statistical difference in the strengths of the MPCR effect in the social identity treatment conditions.***

The effect of revealing a shared social identity does not significantly change the increase in the contributions to the regional public good when its MPCR increases.



# Hypothesis 2 – Econometric evidence

**Table 2: Individual contributions, full sample**

	$q^p$	$q^l$	$q^r$	$q^p$	$q^l$	$q^r$
	Private	Local	Regional	Private	Local	Regional
HIGH	-0.27 (0.260)	-1.49*** (0.212)	1.76*** (0.309)	0.26 (0.263)	-1.61*** (0.215)	1.87*** (0.311)
LABEL	-0.08 (0.241)	0.14 (0.064)	-0.07 (0.282)	-0.04 (0.249)	0.07 (0.252)	-0.03 (0.296)
HIGH x LABEL	0.09 (0.367)	0.06 (0.309)	-0.16 (0.444)	0.08 (0.377)	0.22 (0.317)	-0.23 (0.456)
Constant	2.33*** (0.169)	2.78*** (0.169)	2.88*** (0.188)	3.09*** (0.606)	2.59*** (0.547)	2.33*** (0.736)
Controls	no	no	no	yes	yes	yes
Neighborhood FE	no	no	no	yes	yes	yes
# of observations	616	616	616	602	602	602

Notes: OLS regressions,  $q^p, q^l, q^r \in [0,8]$ . Robust standard errors in parentheses; \* $p < 0.1$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

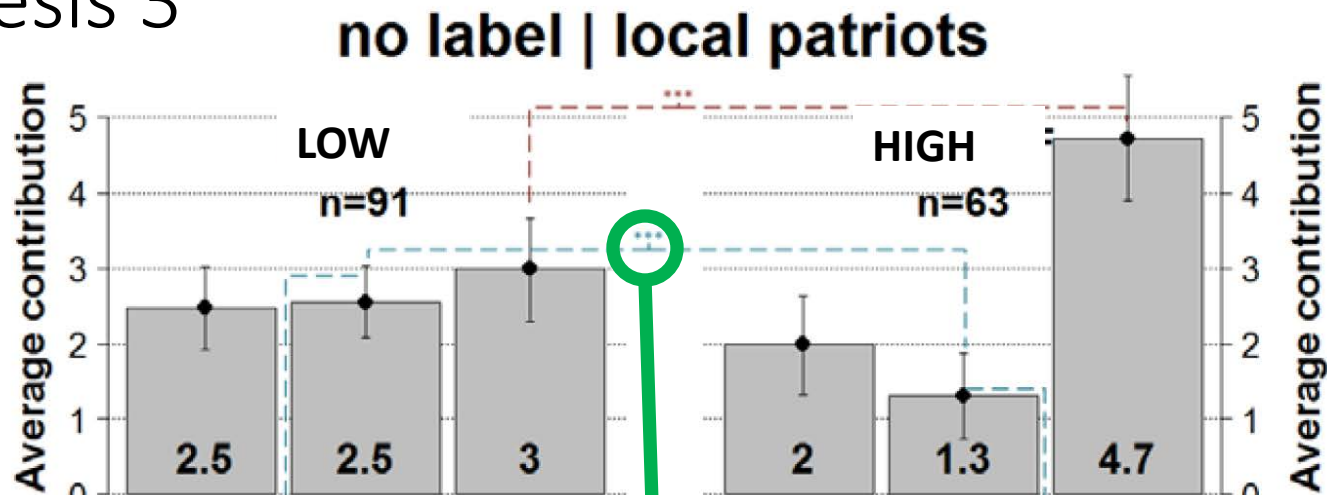
Controls: age, female, income, education, religious, years of residency in the neighborhood, years of residency in the metropolitan region.

Robustness checks

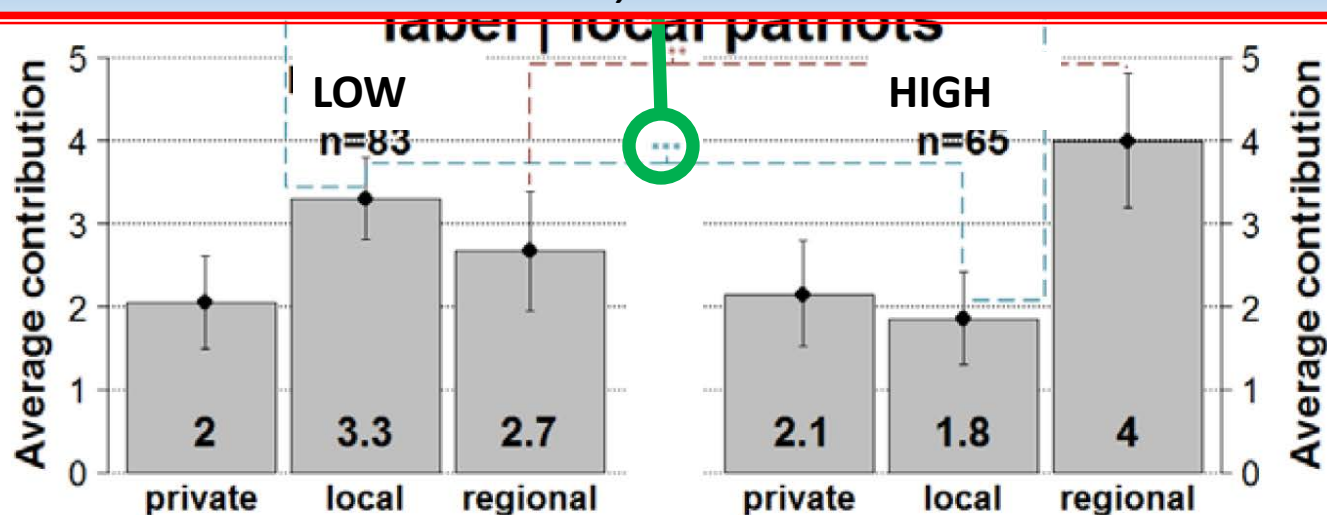
# Hypothesis 3: Patriots level up even less

- Robustness of results to home-grown heterogeneity in neighborhood attachment (NA)
  - NA may be more important in other settings (e.g. sectarian cities (Meier et al. 2013))
  - Patriots may become leaders when there is a bit of sequentiality in the real world (Vesterlund 2003, Andreoni and Petrie 2004)
- Elicited through questionnaire => five-component index of NA
- What about the behavior of those who declare above-median NA ("local patriots") ?
- Findings
  - Local patriots contribute significantly more to the LPG than other subjects if and only if they know that the local group consists of neighbors.
  - Local patriots also respond more strongly and statistically significantly to the social identity treatment than others.
  - In LABEL, local patriots increase their contributions to the LPG by 1.21 (LOW MPCR;  $p < 0.05$ ) and by 0.64 (HIGH MPCR;  $p < 0.10$ ) relative to those without strong neighborhood attachment.
- But: Do they also level up less when the MPCR of the RPG increases?

# Hypothesis 3



**Result 3 (no interaction effect among local patriots):** *There is no statistical difference in the strengths of the MPCR effect exhibited by subjects with strong place attachment in the social identity treatment conditions.*



Note: Average contributions to private, local and regional account in the no label (upper half) and label (lower half) of LOW (left) and HIGH (right) for the sample restricted to *local patriots*. Confidence intervals at the 95%-level.

# Hypothesis 3 – Econometric evidence

**Table 3: Individual contributions, local patriots**

	$q^p$	$q^l$	$q^r$	$q^p$	$q^l$	$q^r$
	Private	Local	Regional	Private	Local	Regional
HIGH	-0.49 (0.398)	-1.25*** (0.307)	1.74*** (0.472)	-0.43 (0.399)	-1.33*** (0.318)	1.76*** (0.482)
LABEL	-0.42 (0.341)	0.75** (0.355)	-0.32 (0.416)	-0.45 (0.350)	0.77** (0.377)	-0.32 (0.450)
HIGH x LABEL	0.59 (0.530)	-0.19 (0.448)	-0.40 (0.646)	0.51 (0.532)	-0.14 (0.474)	-0.37 (0.671)
Constant	2.47*** (0.261)	2.55*** (0.248)	2.99*** (0.299)	4.17*** (0.889)	1.93*** (0.779)	1.90*** (1.11)
Controls	no	no	no	yes	yes	Yes
Neighborhood FE	no	no	no	yes	yes	Yes
# of observations	302	302	302	294	294	294

Notes: OLS regressions,  $q^p, q^l, q^r \in [0,8]$ . Robust standard errors in parentheses; \* $p < 0.1$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

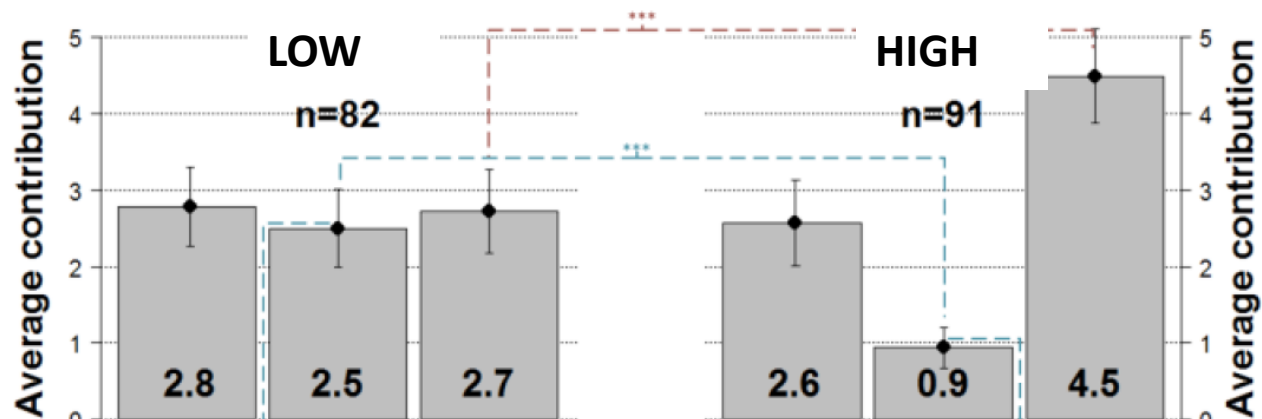
Controls: age, female, income, education, religious, years of residency in the neighborhood, years of residency in the metropolitan region.



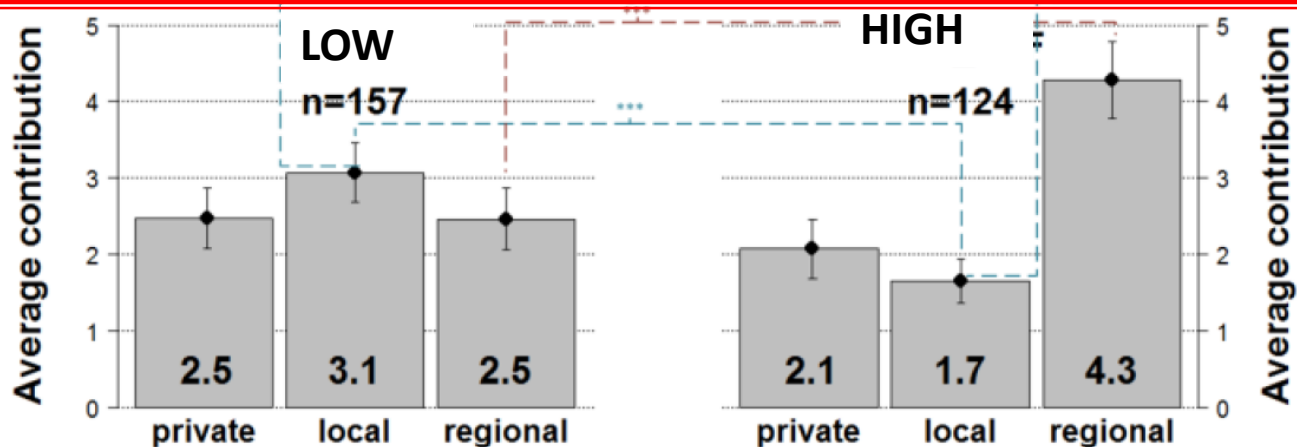
# Hypothesis 4: The locally primed level up (even) less

- Robustness to induced heterogeneity in neighborhood attachment (NA) through priming
  - Our treatment may lack salience
- What about the behavior of those who primed for NA?
- Findings
  - Priming has the expected effect on contribution behavior.
  - Locally primed subjects in the LABEL treatment have significantly higher average contributions to the LPG than the control group both at a LOW MPCR (3.1 vs. 2.5,  $p = 0.054$ , MWU test) and a HIGH MPCR (1.7 vs. 0.9,  $p = 0.001$ , MWU test)
- But: Do they also level up less when the MPCR of the RPG increases?

# Hypothesis 4: The local primed



**Result 4 (no interaction effect through priming):** *There is no statistical difference in the strengths of the MPCR effect exhibited by subjects primed for place attachment in the social identity treatment conditions.*



Note: Average contributions to private, local and regional account in the no label (upper half) and label (lower half) of LOW (left) and HIGH (right) for the sample restricted to *locally primed subjects*. Confidence intervals at the 95%-level.

# Hypothesis 4 – Econometric evidence

**Table 4: Individual contributions, full sample, after prime**

	$q^p$	$q^l$	$q^r$	$q^p$	$q^l$	$q^r$
	Private	Local	Regional	Private	Local	Regional
HIGH	-0.21 (0.383)	-1.56*** (0.287)	1.77*** (0.416)	-0.42 (0.557)	-1.01** (0.287)	1.43** (0.612)
LABEL	-0.31 (0.328)	0.57* (0.323)	-0.26 (0.343)	-0.51 (0.503)	0.95** (0.470)	-0.44 (0.574)
HIGH x LABEL	-0.18 (0.472)	0.14 (0.378)	0.05 (0.528)	0.12 (0.685)	-0.33 (0.548)	0.21 (0.791)
Constant	2.78*** (0.261)	2.50*** (0.255)	2.72*** (0.277)	3.25*** (0.103)	1.54* (0.859)	3.22*** (1.30)
Controls	no	no	no	yes	yes	yes
Neighborhood FE	no	no	no	yes	yes	yes
# of observations	454	454	454	232	232	232

Notes: OLS regressions,  $q^p, q^l, q^r \in [0,8]$ . Robust standard errors in parentheses; \* $p < 0.1$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

Controls: age, female, income, education, religious, years of residency in the neighborhood, years of residency in the metropolitan region.

# Hypothesis 5 – Price constancy

- Compare giving for case of different total benefits at constant prices (MIX condition)
- Comparison:
  - In the NOLABEL (LABEL) treatment, subjects in the MIX condition contribute an average of 3.4 (2.7) to the RPG compared to 2.9 (2.8) in the LOW MPCR condition.
  - The effect of increasing TB is therefore 0.5 (– 0.1) and across social identity treatments LABEL and NOLABEL => statistically indistinguishable.
  - Regression analysis finds no evidence for a statistically significant interaction effect between an efficiency increase and revelation of shared identity.

**Result 5 (constant prices):** *There is no statistical difference between subjects aware or unaware of a shared neighborhood affiliation in the local group in how their contributions change in response to a pure efficiency increase.*

# Discussion

- Evidence from existing multi-level PG might suggest that parochialism is an important driver of scale decisions
- Experiment here suggests otherwise
  - Perceived efficiency differences not large
  - Goods are not close substitutes
    - Local conbenefitd

Conclusions

# Conclusions

- Question: Does social identity lead to a parochialism penalty on efficiency in a setting in which public goods can be provided at different spatial scales?
  - Specifically, do subjects who know that they can specifically benefit their neighbors level up less, despite total benefit gains.
- Importance
  - Parochialism as a limit to provision at the efficient scale
- Three novel elements
  - Neighborhood-within-a-region setting favorable to parochialism
  - Two-by-two design (MPCR **and** awareness of shared neighborhood)
  - Design variation that allows neutralizing possible price effect confound.
- No evidence that the average subject fail to level up
  - No interaction effect between awareness of shared neighborhood and MPCR
- Robust towards
  - Home-grown heterogeneity in neighborhood attachment (local patriots)
  - Induced subjects heterogeneity in neighborhood attachment
  - Constant price of giving

Even naturally grown types of social identity do not necessarily imply a parochialism penalty in the scale problem of public good provision.