

# **The price of warm glow**

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# Introduction

- Challenging to Identify motives for giving
  - Pure Altruism (Compassion for others)
  - Impure Altruism-Warm Glow (Andreoni + colleagues)
    - Social & Self Image, Norms/Expectations, Signalling & Social Status, Social Pressure, Warm Fuzzy, ...
  - Evidence identifying motives:
    - Ariely et al '09; Bauer et al '12; Brown et al '13; Carpenter & Myers '10.
- Pure + Impure motives => charitable behavior
- Why Identify?
  - Science: understanding behavior, human condition
  - Policy (Government, Charitable Organizations)

# Background Motivation

- The Volunteering Puzzle (e.g., Handy & Katz '08)
  - If value to charity of volunteering less than Value to charity of working same amount of time at private wage and donating earnings, why volunteer
  - Warm Glow and **the price of impurity**

## *The price of impurity*

- Lab experiment designed to exogenously manipulate relative weight of pure vs. impure motives, and hence price of impurity.
- What are the implications of the inefficiency due to the price of impurity for:
  - Overall value to the charity?
  - Crowding out due to government policy?
  - Charities policies from matching contributions?
  - Substitution of money and time donations?

## Defn: *The price of impurity*

- Agents get utility from inc, pure and impure motives. Let
  - $g$  = monetary donation,  $h_v$  = volunteer time
  - $V(\hat{g}, \hat{h}_v)$  be the value generated for the charity by the agent's choice of  $\{\hat{g}, \hat{h}_v\}$ , and let  $C(\hat{g}, \hat{h}_v)$  be the cost.
  - $\{g^*, h_v^*\}$  be the choice the agent could have made that maximizes his income while holding constant the amount the charity would receive at  $V(\hat{g}, \hat{h}_v)$  and let the cost had the agent made this choice be  $C(g^*, h_v^*)$

$$\text{Price of impurity} = \frac{C(\hat{g}, \hat{h}_v) - C(g^*, h_v^*)}{C(\hat{g}, \hat{h}_v)}$$

- Price of impurity is the proportion of each dollar the donor sacrificed for charitable giving that we can be sure was made solely for 'warm glow' effects

# Experimental Design

- Subjects have  $\$E$  and work time  $H$  to allocate to themselves and an obscure charity
- Task for self & charity:
  - Address, fold and stuff envelopes
  - If work for self: earn wage  $w_p$  paid by private firm
  - If work for charity: produce value of  $\$0.30$  per unit actual charity cost
- Private firm flyer to get eye check-up
- Charity builds primary schools in Uganda
- Used methods to verify real organizations and payments made

# Experimental Design – within/**between**

- 2x2 between subjects design:
- (1) Impure (baseline) vs. Pure frame:
  - Pure: focus attention on *total* benefit to charity
  - Impure: focus attention on money and time sacrifice
- (2) Tax Destination: to Nowhere or to charity

	Impure (baseline) (high $\alpha$ )	Pure (prime) (low $\alpha$ )
Tax to Nowhere ( $\lambda = 0$ )	25	25
Tax to Charity ( $\lambda = 1$ )	25	25

# Experimental Design

Baseline (impure focus)

Prime (pure focus)

Certificate of Thanks

Certificate of Thanks

The African Foundation For People  
In Need thanks you for your donations  
of money and time.  
You have given \$            and            minutes  
of your time to the organisation.

The African Foundation For People  
In Need thanks you for your donations  
of money and time.  
You have generated \$            of value for  
the organisation.



AFRICAN FOUNDATION FOR PEOPLE IN NEED



AFRICAN FOUNDATION FOR PEOPLE IN NEED



# Experimental Design – **within**/between

- Within to identify substitution effects
- Made 24 decisions that varied:
  - Money Endowment: \$15 or \$25 ( $0 \leq g \leq \$15$ )
  - Time Endowment: 40 Minutes ( $0 \leq h_v \leq 40$ )
  - Private Wage: \$0.10, \$0.30, \$0.45 per unit
  - Match: 50%, 100%
  - Tax: 0%, 25%
- One decision randomly chosen, played out

# Experimental Design

Condition	Endowment	Non-Charity Wage Rate		Tax Rate	Donation Match	Money Donation to Charity			Endowment Donated/Kept			Volunteer Time to Charity			Time working for charity/self
		Per Envelope	Hrly Estimated			\$0	\$12.5	\$25	0 min	20 min	40 min				
21	\$25	\$0.45	\$27	0%	50%				\$8.82/\$16.1						24 min/16min
22	\$25	\$0.45	\$27	0%	100%				\$11.5/\$13.5						18 min/22min
23	\$25	\$0.45	\$27	25%	50%				\$11.25/\$13						28 min/12min
24	\$25	\$0.45	\$27	25%	100%				\$5.75/\$19.2						36 min/4min

## Calculations for Condition 21

Benefits to AFFPIN		Benefits to Self	
Donation to Charity Before Match	\$8.82	Amount kept from endowment	\$16.18
Matching Donation to Charity	\$4.41	After tax wage generated for private labour	\$7.2
Value of Volunteer Time to Charity (estimated)	\$7.2		
<b>Total value to charity</b>	<b>\$20.43</b>	<b>Total income received at end of experiment</b>	<b>\$23.38</b>

## Certificate of Thanks

The African Foundation For People In Need thanks you for your donations of money and time. You have given \$ **8.82** and **24** minutes of your time to the organisation.



Previous

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# Results

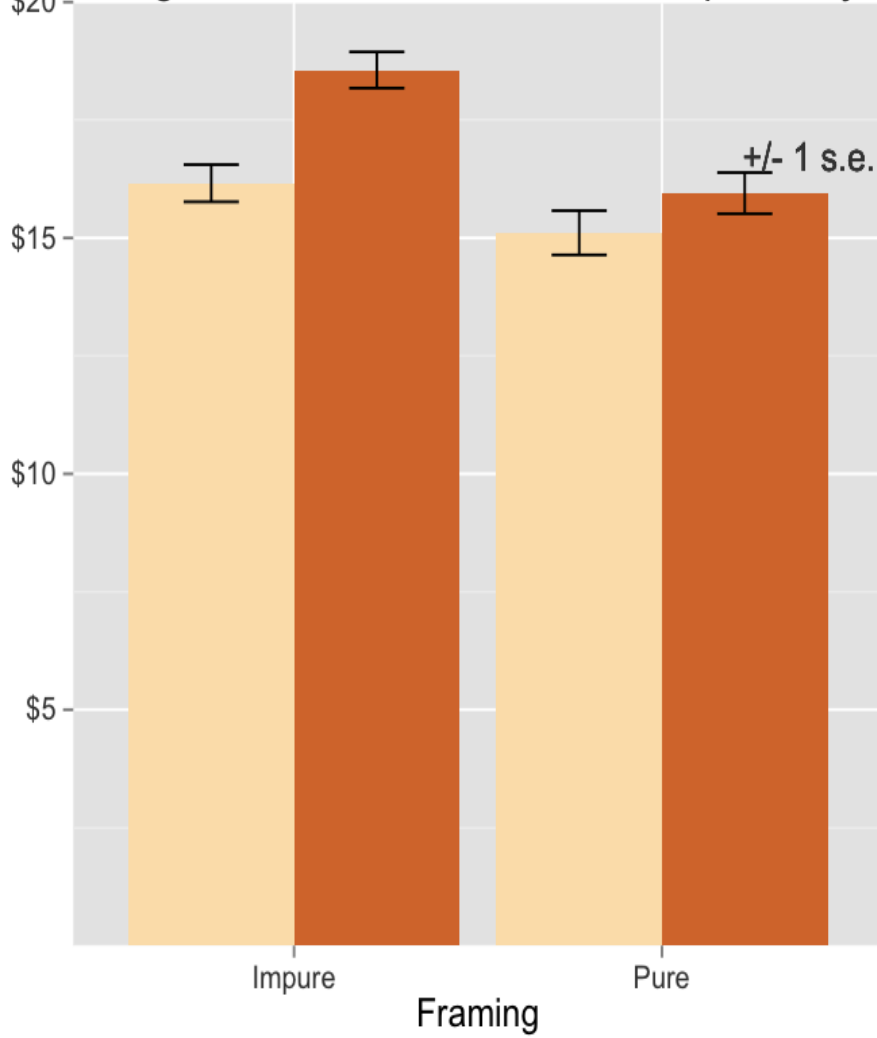
(mean and standard errors)

<b>Conditions</b>	<b>Money Donation (\$)</b>	<b>Time Donation (minutes)</b>	<b>Mean Price of Impurity</b>
<i>Between Subjects</i>			
<b>Impure Prime</b>	<b>6.07 (0.13)</b>	<b>17.0 (0.34)</b>	<b>0.212 (0.01)</b>
<b>Pure Prime</b>	<b>5.60 (0.16)</b>	<b>12.9 (0.38)</b>	<b>0.158 (0.01)</b>

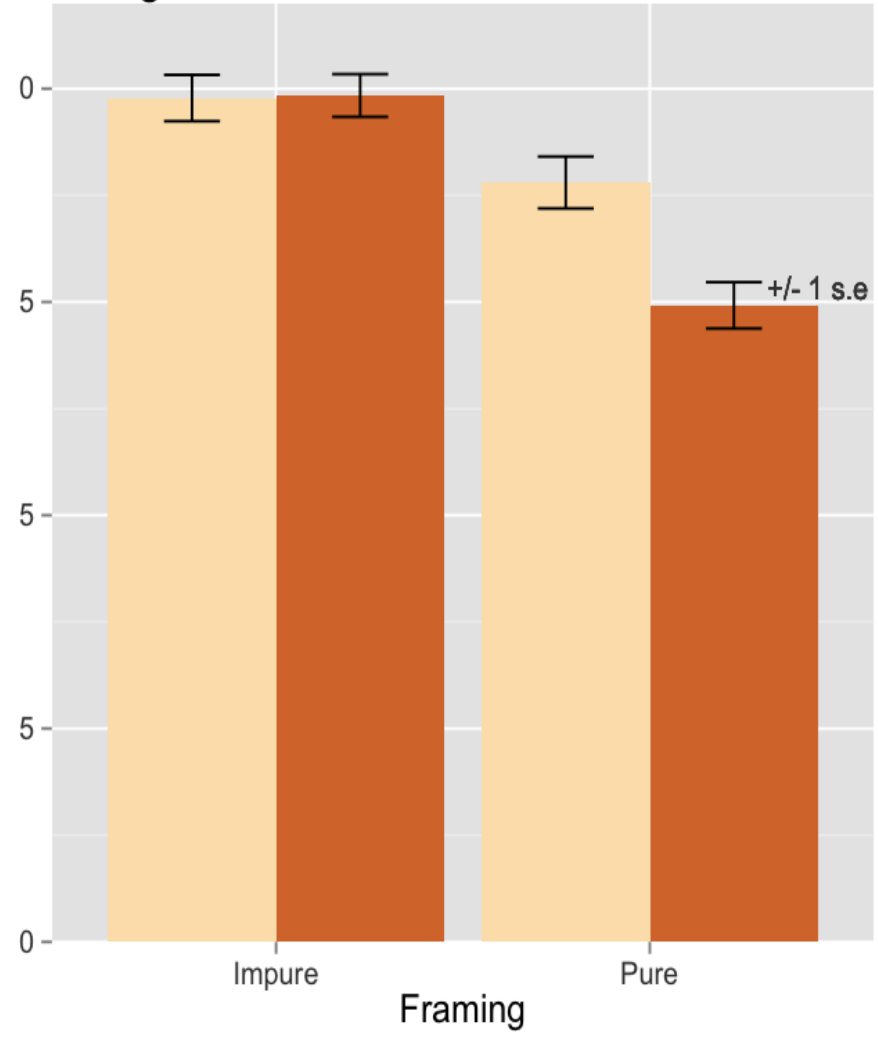
Tobit regressions with individual controls:  
Differences significant at 5% level **(H1)**

# Results

Average Public Good Value Raised, per Subject Average Total Income Cost of Donation Choice



**Tax Treatment** Regular Tax Tax to Charity



**Tax Treatment** Regular Tax Tax to Charity

# Significant Results (Hypothesis testing)

(from joint money & time tobit estimation)

	Money Donation (\$)	Time Donation (minutes)
Crowding Out (H2)	Impure: No Pure: -60%***	Impure: No Pure: -15%*
Price to Give Money ↑ (H3, H4)	Impure: Neg*** Pure: Neg*** Bigger in Pure***	Impure: Pos* Pure: Pos*** Dir more in Pure
Price to Give Time ↑	Impure: Neg* Pure: Neg**	Impure: Neg*** Pure: Neg***
Total Potential Income ↑	Impure: Pos*** Pure: Pos***	Impure: Pos*** Pure: Pos***

Brown e al  
similar res.

# Contributions & Summary of Results

- 1. We define a shadow price to measure the scale of impurity**
- 2. The relative scale can be moved by framing**
3. When framed towards pure motives, there is
  - 3.1 less inefficiency (lower price of impurity) but
  - 3.2 less charity overall
4. Crowding effects larger in the pure frame
- 5. *Donations of money and time are substitutes to the extent that motivations are pure:***  
**Implies estimated effect of any policy (e.g. tax) on just one dimension will overstate the total effect.**  
**Substitution effects in the field: Cairns and Slonim (2011); Lacetera, Macis, Slonim (2012, 2013); Armentier (2012)**

# Discussion

- Current study may underestimate impure motives since we shut off other impure motives.
- Charities may “have it right” when focussing donor thanks on impure motives (for the money they donated and time they volunteered) even if this increases the price of impurity since it:
  - (a) increases overall charitable behavior and
  - (b) reduces crowding effects.
- **Policies targeted to assist charities should be more effective if target charities whose donors are motivated more by impure motives.**

# Thank You

Thank you for

– giving 20 minutes of you time today



– funding for this conference!



– And also helping us produce valuable new insights