The Behavioral Foundations of Market and Non-Market Exchange

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Part 1: Quid Homo?

Homo economicus

Adam Smith is a son of the enlightenment era:

- Man is individualistic, rational, and self-interested
- Yet we get a harmonious world:
  - law of supply and demand: stuff that is needed gets made
  - comparative advantage: we specialize in what we are good at
  - Walras Law: nothing wasted, nothing gained
  - perfect competition: we respect property rights and contracts
  - welfare theorems: efficiency is achieved through market exchange; equity is achieved through redistribution

Homo behavioralis

- Freud and Marx: sub-conscious and ideology
- Structuralism: it's all in the mind
- Experimental psychology: it's all in the lab
- Evolutionary psychology: it's all in the genes
- Neuro-science: it's all in the brain
- Behavioral morality: it's all confusing

Behavioral economics

- Systematic behavioral biases in decision making
- Individual preferences unstable and somewhat malleable
- Deviation from self-interest: other-regarding preferences
  - Altruism
  - Paternalistic preferences
  - Invidious preferences
- Social preferences
  - ex ante: equality of opportunities
  - ex post: equality of outcomes (income, health, life expectancy)
  - entitlements and priviledges
- Preferences over process, e.g., democracy, judicial adjudication of contracts
  - Demand for agency (e.g., Afsal et al. 2018)
  - Demand for control/power

Competition: What Is It Good For?

Competition for goods

- Like hunting and gathering
  - Vernon Smith game: works well in classrooms etc
  - taken to Sierra Leone – Bulte et al (2017): works best within village $><$ across villages
- Rivalry: the desire to win
  - 2nd price auctions and winner's curse
  - Fafchamps, Kebede and Zizzo: take more risk to keep up with winners
- Comola and Fafchamps (in preparation): many beneficial exchanges do not happen
  - Walrasian auctioneer game with deferred acceptance
  - People bid sequentially with feedback (accept or not)
  - Only 64 to 75% of mutually beneficial trades are made
  - Worse if more than two people value a link (e.g, positive externalities)
  - Reason seems to be many players overreport costs and underreport values
  - $=>$ competition to capture surplus makes them lose valuable trading opportunities

Competition for goods

- Unlike family decisions, no consideration for others: Belot and Fafchamps (2018)
- Dictator subjects choose between two payoff allocations between four participants
- Different frames to represent different domains:
  - Frame 1: non-market domain: subject chooses between two pies
  - Frame 2: mate selection: subject chooses between two team partners
  - Frame 3: market domain: subject chooses between two types of team partners
- We find that, among UK lab subjects:
  - more efficiency in Frame 1, except among low payoff subjects
  - subjects are more altruistic in frame 1 than 2 or 3.
  - subjects are more rival in frame 3 than in 1 or 2.

Table 5. Regression of efficiency on treatment dummies

	All subjects		High payoff		Middle payoff		Low payoff	
	Coef.	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Treatment T1	9.3%	4.01	11.4%	3.54	10.4%	2.45	4.3%	1.18
Treatment T2	5.8%	2.68	5.9%	1.86	8.9%	2.37	1.9%	0.66
Intercept = T3	60.9%	29.5	60.7%	21.04	59.8%	14.66	62.5%	14.88
N Observations	1573		763		369		381	

Dependent variable = percentage of maximum achievable aggregate payoff. Linear probability model, with session fixed effects. Standard errors clustered at the participant level.

T1=pie division; T2=mate selection; T3=market

Table 6. Assignment to archetypes, assuming no mistakes

	All subjects			High payoff			Low payoff			Middle payoff		
Archetype:	**T3**	**T2**	**T1**	**T3**	**T2**	**T1**	**T3**	**T2**	**T1**	**T3**	**T2**	**T1**
Selfish	57%	64%	45%	54%	53%	38%	50%	73%	55%	68%	78%	48%
Invidious	17%	12%	11%	4%	0%	0%	50%	41%	35%	9%	9%	10%
Maximin	22%	23%	21%	2%	0%	8%	18%	14%	20%	68%	78%	48%
Multiple archetypes:												
Fits more than one	26%	29%	21%	0%	0%	0%	36%	41%	35%	68%	78%	48%
Fits none	34%	34%	48%	39%	47%	54%	36%	27%	40%	23%	13%	43%
Number of observations	540	552	480	276	282	234	132	132	120	132	138	126

T1=pie division; T2=mate selection; T3=market

Competition and team formation

- Fafchamps and Hill (2017)
- When in a team: others can burn or steal my stuff, or give stuff to me
- Decision to join a team

Table 3. Summary of play

	UK		Kenya		Uganda	
	Mean	N.obs.	Mean	N.obs.	Mean	N.obs.
Part 1: Joining imposed:						
Average share of the endowment that is:						
Burnt in burning treatment	7.8%	144	4.8%	198	10.7%	162
Stolen in stealing treatment	37.4%	432	23.4%	594	26.3%	486
Given in giving treatment	0.7%	144	4.6%	198	8.4%	162
Part 2: Joining only:						
Percentage of subjects joining:	95.8%	144	94.4%	198	82.1%	162
Part 3: Joining + transfers:						
a. Percentage of subjects joining in:						
Burning treatment	82.6%	144	59.6%	198	42.0%	162
Stealing treatment	64.6%	288	82.5%	360	74.8%	306
Giving treatment	81.6%	288	75.7%	378	82.4%	324
b. Average share of the endowment:						
Burnt in burning treatment	5.9%	111	6.7%	97	17.6%	39
Stolen in stealing treatment	70.3%	167	41.0%	284	38.5%	211
Given in giving treatment	0.8%	235	7.1%	286	8.2%	267

Source: Authors analysis based on data described in the text. Note: The average share of the endowment that is burnt, stolen or given is calculated as the average of the choices made by the subject for the other two players in the group. We thus have one observation per subject per round.

Table 4. Expectations of others' behavior

	UK		Kenya		Uganda	
	Mean	N.obs.	Mean	N.obs.	Mean	N.obs.
Percentage of subjects responding 'yes' when asked whether other will…						
Burn their endowment	29.6	144	42.4	198	51.5	145
Steal their endowment	76.9	144	53.6	126	54.7	145
Give to them	12.9	144	39.9	126	52.0	145
Percentage of subjects responding `yes' when asked whether others expect them to give.						
Giving norm	17.9	144	47.0	126	45.4	145
Ratio Expectation to Part 1 play						
Burning	3.8		8.8		4.8	
Stealing	2.1		2.3		2.1	
Giving	18.4		8.7		6.2	

Source: Authors analysis based on data described in the text. Note: Some expectation questions were not asked to Kenyan participants in the first two sessions because of a technical glitch, hence the smaller number of observations. Differences between Oxford and the two African samples are statistically significant using either a t-test, or a joint significance test in regressions of answers on country dummies with session clustering.

Competition for partners

- Like competing for mates: Comola and Fafchamps (2018):
  - matching game with fixed values and sequential offers and counter-offers to link
  - people are very good at competing through matching offers and counteroffers
  - around 94% of stable links are formed; overwhelming fraction of all games converges to full stable equilibrium
  - deviation from equilibrium: sour grapes

Competition for information through link formation

- Unlike competing for mates: Caria and Fafchamps (2018):
  - people access the informations others have to linking to them (like observing them)
  - very simple best response: link to the node with the highest reach
  - subjects only achieve a fraction of full efficiency, only a little bit better than random
  - seems to be partly because people follow the wrong heuristic
  - $=>$ can people work out a best response in a simple game?

Competition for a prize through information sharing

- Unlike competing for mates: Ghana experiment (unpublished)
  - based on Crawford and Costa-Gomez
  - people get a prize for guessing a fraction of another team's guess [like beauty contest game]
  - purpose is to measure strategic sophistication
  - in universities, of those lab subjects whose choices make some sense, a large fraction are level-1: they choose the best response against an opponent who plays completely randomly
  - in Ghana: all subjects selected from the general urban population of small entrepreneurs play randomly

Competition – What Is It Good For?

- competing for mates: yes (but sour grapes)
- competing for goods: yes but not always more efficient (overbidding, less altruism, more envy)
- competing for team formation: worry about being exposed to opportunistic or destructive behavior
- competing for information through link formation: not very strategic
- competing for a prize through strategic thinking: quite bad

Part 3: The Origin of Trust

The origin of trust

- Market exchange create many opportunities for cheating/opportunistic breach
- Hence exchange requires trust: Bulte et al. (2017) Sierra Leone
- Where does it come from, how does it start?
  - Screening: try people out first before committing, e.g., Watson 'Starting Small'
  - Group cooperation combined with social sanctions, e.g., Bernstein on diamond traders
  - Brave reciprocity, e.g., tit-for-tat (Axelrod)
  - Generalized morality: people internalize norms that dictate trustworthy behavior
  - Blind trust: 'people are good'; or blind distrust
  - Unconditional cooperation: 'I'm going to be good; if you choose to be bad, it's your problem with God, but I won't stoop to your level'

Conditional behavior: 1. favor exchange

- is someone helping a neighbor as part of a repeated game of self-interest,
- or is it altruism (I empathize for the person)
- or is social norms (I avoid condemnation and ostracism from a group)
- or is it individual morality (I want to do the right thing by me)
- Comola and Fafchamps (2014):
  - Indian farmers: farmers provide advice on agricultural practices even to those who have no valuable information to share back
  - Tanzanian villagers trade gifts and small loans with those who are able to help them back

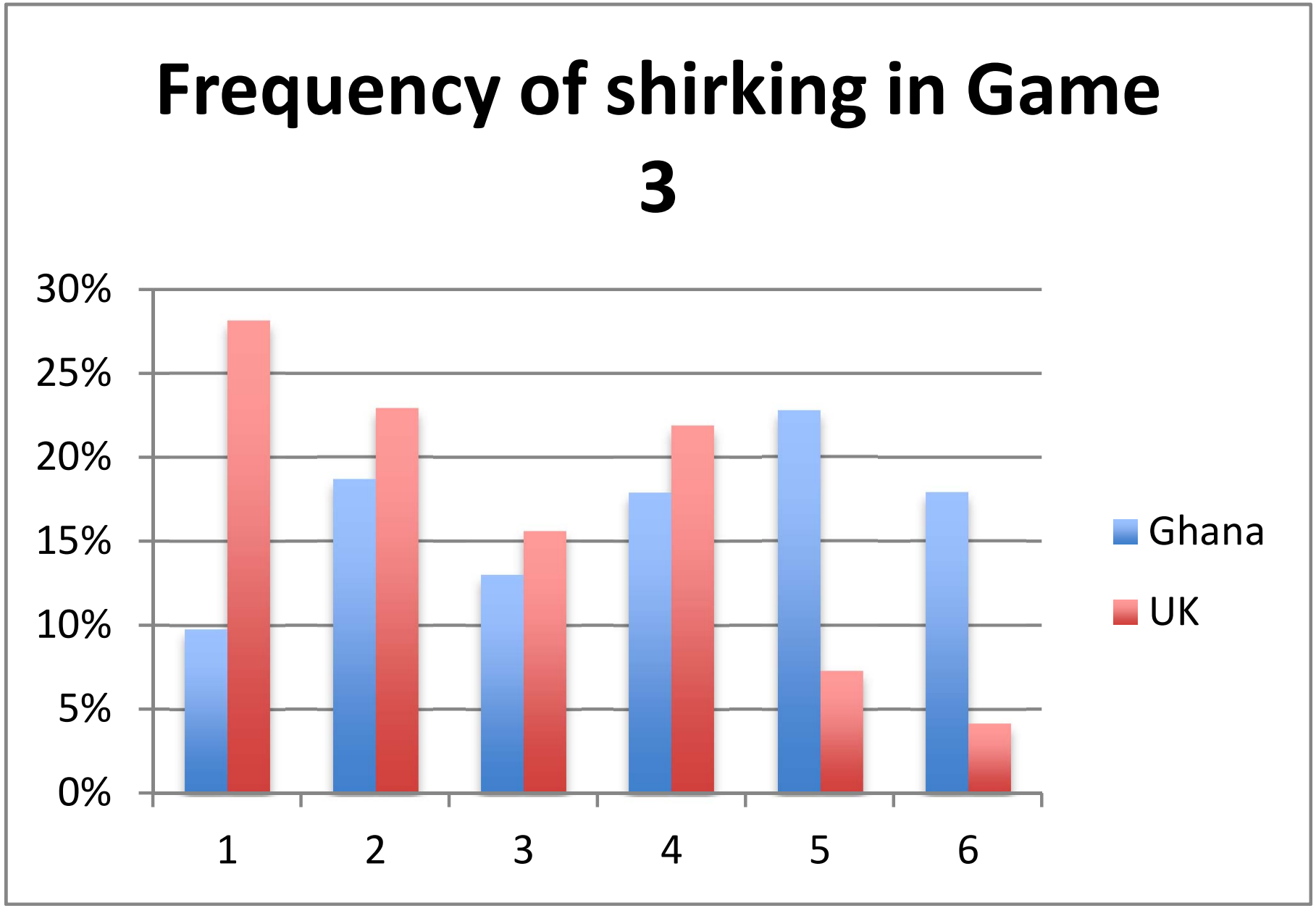
Conditional behavior: 2. punishment:

- is an employer firing/demoting a shirking worker to discipline bad behavior, as suggested by the economic models?
- or is the firing/demoting a protective response to inference on (dishonest/unreliable) type?
- or is it a revenge for bad behavior, or a manifestation of moral condemnation/self-righteousness?
- $=>$ is punishment a rational conditional behavior $=$ it occurs as part of a pre-announced contractual behavior
- $=>$ or is it unconditional $=$ it is a emotional response to an 'anticipated' situation (fear, vengeance, outrage), not something that was pre-announced in the contract

Conditional behavior: 2. punishment:

- Here is an example from Davies and Fafchamps (2019a)
- Mobile lab subjects in Ghana and UK are assigned worker or employer role
- Employer makes wage offer to worker in exchange for high effort
- Worker chooses effort ex post
- Game is repeated
- We find:
  - in UK employers punish low effort by lowering subsequent wage offer
  - in Ghana employers do not punish workers for low effort
  - in UK workers who have been punished in the past slightly increase compliance later
  - not in Ghana (if anything, they shirk more)


Frequency of shirking in Game 2
30%
25%
20%
15%
10%
5%
0%
1
2
3
4
5
6
Ghana
UK


Frequency of shirking in Game 3
30%
25%
20%
15%
10%
5%
0%
1
2
3
4
5
6
Ghana
UK

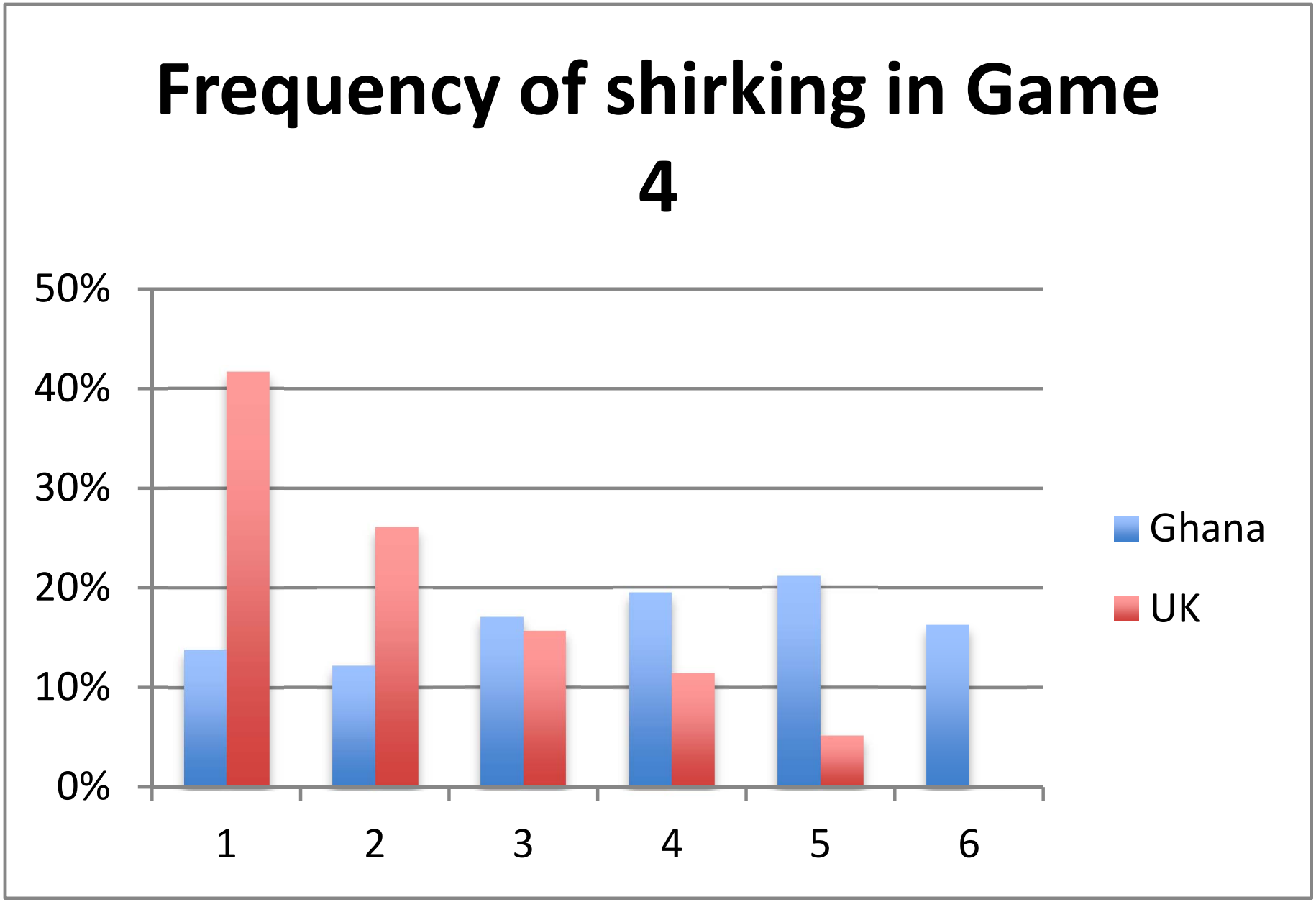

Frequency of shirking in Game 4
50%
40%
30%
20%
10%
0%
1
2
3
4
5
6
Ghana
UK

Table A16. Testing responsiveness of subjects' shirking to past punishment in Game 2		
	Game 3	Game 3&4
Number of times shirked in Game2 (UK subjects)	0.793***	1.294***
	(0.165)	(0.335)
Number of times shirked in Game2 (Ghana subjects)	0.295*	0.606***
	(0.143)	(0.143)
Number of times was punished for shirking in Game 2 (UK subje	-0.165*	-0.156
	(0.0886)	(0.166)
Number of times was punished for shirking in Game 2 (Ghana s	0.0533	0.0819***
	(0.0371)	(0.0262)
UK subject dummy	-1.072***	-2.764***
	(0.330)	(0.468)
Constant	1.823***	3.741***
	(0.279)	(0.388)
Number of observations	5,520	5,520
R-squared	0.280	0.455
The dependent variable is a dummy=1 if the subject shirked in the current period.		
Standard errors in parentheses are all clustered at the session level.		
*** p<0.01, ** p<0.05, * p<0.1		

Conditional behavior and trade

- Here is an example from Davies and Fafchamps (2019b)
- M-Turk subjects are assigned worker or employer role; one-shot game
- Incentive schemes: fixed wage (high, low); bonus (commitment, renege); malus (commitment, renege)
- Employer chooses incentive scheme and makes contract offer to worker
- Worker accepts contract and chooses effort ex post
- We find:
  - US 'workers' respond much more to incentivization than in India; exert lower effort in high fixed wage; exert very low effort in low fixed wage
  - US 'employers' more reluctant to offer high fixed wage, especially to US workers
  - US subjects more likely to conform to self-interest
  - Indian subjects more likely to conform to be intrinsically motivated

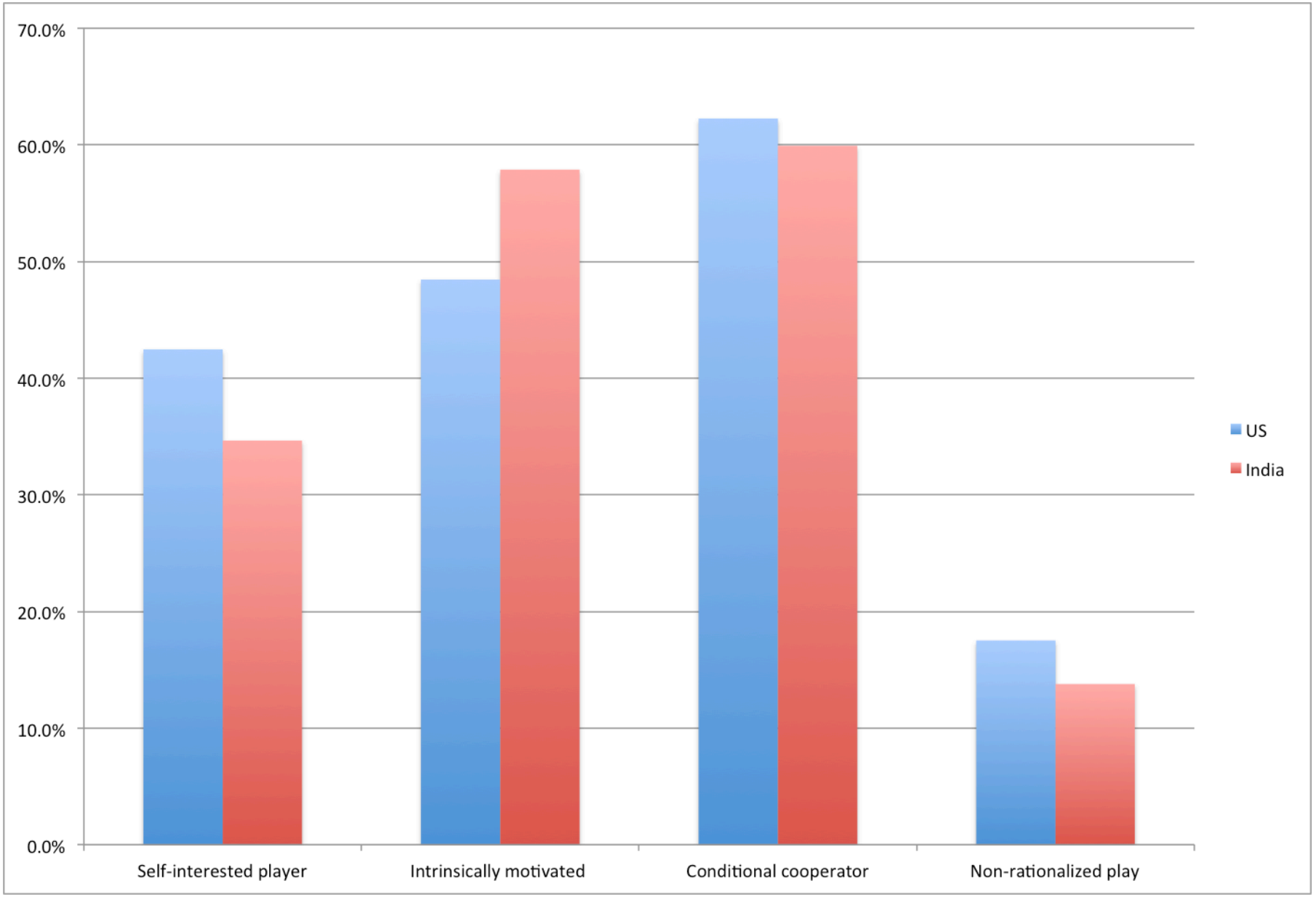

70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Self-interested player
Intrinsically motivated
Conditional cooperator
Non-rationalized play
US
India

Table 16. Types and payoff				
Employer:		Dummy=India		N
	Payoff	-0.74		3060
	Self-interested player	-8.5%	***	3060
	Intrinsically motivated	2.6%		3060
	Conditional cooperator	-8.3%	***	3060
	Non-rationalized play	-0.7%		3060
Worker:				
	Payoff	0.01		3060
	Self-interested player	-7.5%	***	2736
	Intrinsically motivated	16.4%	***	2736
	Conditional cooperator	2.6%		2736
	Non-rationalized play	-6.6%	***	2736

Note: Each row is a separate OLS regression of the dependent variable on the left on an India dummy and a set of treatment dummies. Standard errors are clustered at the individual level. * significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level.

Table 17. Payoff and strategy							
	Employer payoff	**SE**		**Worker payoff**	**SE**		
Dummy = India	-0.659	0.465		-0.092	0.091		
Self-interested player	1.934	0.758	**	0.106	0.118		
Intrinsically motivated	1.743	0.454	***	-1.523	0.159	***	
Conditional cooperator	0.135	0.732		-0.060	0.097		
Non-rationalized play	-7.314	0.607	***	-5.604	0.186	***	
Treatment dummies	Yes			Yes			
Number of observations	3060			2736			
Note: Each column is a separate OLS regression. Standard errors are clustered at the individual level.							
* significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level.							

Conclusion

- There are many opportunities for interesting work in behavioral economics on social norms, market institutions, and development
- For a research agenda to be fully successful, some paradigm changes are needed:
  - There is too little consideration for the emotional aspect of moral norms:
    - E.g.: guilt; shame; pride; moral outrage; self-righteousness
  - There is insufficient consideration regarding preferences over process:
    - E.g.: incentive and punishment systems; intentional vs spontaneous behavior
  - There is a need to distinguish social preferences over outcomes and over process:
    - More equal distribution yes but not through theft/criminal activity

Conclusions

- say most people are bad at conditional behavior (i.e., setting and responding to incentives) but are good at unconditional behavior (anger, fear, outrage, etc) based on the violation of perceived moral violations
- then moral context can generate behavior that looks like conditional behavior when in fact it is pure unconditional behavior based on specific expectations based on morality
- [this is related to Picketty's recently made point that 'ideology' (the moral view about social differentiation) is essential to comprehend redistributive policy $=>$ setting incentives (democracy to give voice to the poor) is not enough to eliminate or reduce inequality]

Thank you

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