

# ICCC Venice Conference: Comments on Norms

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# Long Term Interest in Norms

- Emerged out of my interest as an economic historian in the analytical status of institutions or rules
- Were they “exogenous” or did they represent a collectively rational choice from a book of blueprints of possible institutional/normative structures?
- 1981 critique of North and Thomas; 1991 “Do Legal Systems Matter?”
- 1984 : “Microeconomics, Norms and Rationality” EDCC
- 2001 book: Altruistically Inclined? The Behavioral Sciences, Evolutionary Theory and the Origin of Reciprocity
- 2008: “Why Multilevel Selection Matters” Journal of Bioeconomics

Economics  
Cognition  
and Society

# ALTRUISTICALLY INCLINED?

Alexander J. Field

*The Behavioral Sciences, Evolutionary Theory,  
and the Origins of Reciprocity*

$$\Delta P = P' - P = \sum_{i=1}^n ((p'_i - p_i) (q'_i / \sum_i q'_i)) + \text{cov}(s_i, p_i) / s.$$

MICHIGAN

# Altruistically Inclined

“Field provides a feast for scholars who are struggling to develop a coherent theory of human behavior grounded in evolutionary biology and tested with empirical data from diverse social settings...scholars in all of the social sciences would be well advised to read this book carefully.”

**--Elinor Ostrom, *Journal of Interdisciplinary History***

# Evolution in my thinking

- Original endorsement of sociological and anthropological approaches stressing socialization and enculturation processes
- Economists shouldn't necessarily disparage the approaches of other social scientists
- Changing attitude on my part toward the power of evolutionary theory to help us understand the human ethogram
- Necessity of acknowledging an historical role for group or multilevel selection: selection above the level of the individual organism

# Motivation

- My concern is with the fundamental behavioral proclivities we assume in understanding or modeling rules or other normative structures
- Many game theory models are driven by narrow versions of rationality: assumption that humans efficiently advance their material self interest. I question whether this style of research can provide an adequate foundation for an empirically informed behavioral science
- Rebellion against this default position is part of what has fueled success of behavioral economics
- We need to invoke evolutionary models of multilevel selection to explain why our proclivities reflect preferences which are not exclusively self regarding

# Behavioral Economics: Lessons from the Military (2009)

- Focus on three issues:
  - the behavioral foundations for creating an effective military unit;
  - evidence that infantrymen have historically been reluctant to fire on the enemy and how this reluctance has been overcome
  - the practice and conventions surrounding the taking of prisoners of war.

# Effective military squads require strengthening weak predispositions toward affirmative altruism

- the effectiveness of an infantry force depends upon the development of bonds of personal loyalty among members of the squad.
- These bonds are described as often stronger than those that unite husband and wife, perhaps equal to those between parent and child, and if successfully established create what is referred to in military writings and popular culture as a band of brothers.
- Effective military training, aside from teaching soldiers discipline, endurance, and various skills, creates an environment in which these bonds take root.

# Loyalty to Squad Members

- Infantry members face the prospect of injury or death and are prepared to risk their lives for the benefit of the group.
- Infantrymen are taught that if a grenade rolls into a foxhole, the closest soldier should cover the grenade with his body to absorb the explosive force.
- Group leaders expect this response, along with many others, to be done without thinking, to be automatic, to be essentially a conditioned reflex, in a manner similar to the fashion in which a Secret Service Agent is prepared without thinking to place him or herself between a bullet and the President.

# Why not let George do it?

- All members of a squad are collectively better off if each “agrees” in advance to fall on the grenade,
- But why, if humans operate so as efficiently to advance their material self interest, which would seem to imply that they prefer life over death, would any narrowly rational individual ever agree to this?
- Why would trainers waste their time talking about honor, duty, and courage?
- if individuals are rational in the sense that they value life over death, it always makes sense to hesitate just a moment and see if George will do it.

# Firing on the Enemy

- If it turns out to be easy, all things considered, to take unrelated individuals and mold them into a squad prepared to trust each other with their lives, it turns out to be remarkably difficult to get them to fire on the enemy.
- That men are prepared, given state sanction for violence, to kill other men, will hardly be surprising to economists.
- What is astonishing is the evidence of how hard it is to get them to do so, particularly in close combat.

# S.L.A. Marshall

- In 1947, S.L.A. Marshall published Men Against Fire, in which he made what to me when I first read it was the astonishing claim that in infantry companies in the Second World War the rate of firing rarely rose above 15 - 20 percent.
- Even for well trained troops with combat experience Marshall concluded that the firing rate never rose above 25 percent. Marshall argued that “the average and healthy individual... has such an inner and usually unrealized resistance toward killing a fellow man that he will not of his own volition take life if it is possible to turn away from the responsibility.”

# Aerial Combat

- The problem of low firing rates also applied to close range aerial combat.
- During World War II less than 1 percent of fighter pilots became aces (more than five kills), and they accounted for 30- 40 percent of all enemy aircraft destroyed.
- Most fighter pilots “never shot anyone down or even tried to.”
- To rectify this the US Air Force engaged in a screening program to try and select for fighter pilot training from among the portion of the population with sociopathic tendencies

# Supporting Evidence: Gettysburg

- After Gettysburg, 27,574 muskets were recovered from the battlefield. Of these, roughly 24,000 were loaded and ready to fire. 12,000 had been (improperly) loaded more than once and of those, 6,000 had had 3-10 rounds rammed down their barrels.
- One weapon had been loaded 23 times (Lord, 1976).

# Gettysburg – unfired rifles

- Civil War soldiers used rifled, muzzle loading muskets with explosive force provided by black powder. With training, infantrymen could reload these weapons quickly. The soldier bit open a paper cartridge, poured powder into the muzzle, followed this with a minié bullet, which he drove home with a countersunk ramrod. A percussion cap ignited the charge. The weapons, mostly Springfield and Enfield rifles, were relatively accurate, certainly more so than smoothbore muskets, and their large caliber bullets produced devastating wounds when they hit home.
- A well trained soldier could expect to get off 4 or 5 shots a minute. In drills soldiers spent five percent of their time firing; the remainder was consumed by the loading process.
- If most soldiers were attempting to load and fire as fast as they could, then 19 times out of 20 they should have fallen with a weapon not ready to be fired. Moreover, a fallen comrade's loaded, cocked, and primed weapon would have been taken up by a survivor and fired

# Wissembourg –1870

- First battle of the Franco-Prussian War, August 4, 1870. The Germans, firing against the French, spent 80,000 rounds to hit only 400 French defenders, a result that can be partly attributed to the fact that the French were dug in behind fortified positions.
- The outnumbered French defenders, however, fired 48,000 rounds against Germans *who were advancing across open ground* and struck just 404 of them, for a hit to fire ratio of 1:119.
- The actual ratio was probably considerably lower, since many of those casualties were from artillery fire.
- Holmes attributes this low ratio to rifle inaccuracy. But this seems implausible, given the baseline eighteenth century Prussian tests using smoothbore muskets.

# Exceptions to Low Firing Problem

- Crew serviced weapons (machine guns)
- Firing at a distance
  - Artillery
  - Naval combat
  - Aerial bombardment
  - Snipers
- Armies in retreat – massacres common
  - Clausewitz: most casualties take place after one side has won

# Biological Bases of Soldiers' Reluctance to Kill

- Is human behavior simply another illustration of “nature red in tooth and claw”? On the one hand, one can point to the historical and contemporary record of violence, murder, atrocities, genocide, and war.
- On the other hand, considering the six and a half billion people who inhabit the planet, it is remarkable how little physical violence there is among us.

# Altruism as Refraining from Harm

- The greatest benefit I can confer on you is usually not to harm you.
- Imagine I am beating you over the head.
- Think how much better you will feel once I stop doing so.
- Think how much benefit I have granted you by desisting or by refraining from hitting you in the first place.
- Affirmative acts are therefore only the tip of the iceberg of biologically altruistic behavior, even though most of the literature on altruism focuses exclusively on them.

# Thin Veneer of Civilization

- Cultural Explanations
- Social Contract Theorists (Locke, Hobbes, Rousseau)
- Huxley, (Evolution and Ethics)
- Freud (Civilization and its Discontents)
- Lorenz (On Aggression)
- Golding (Lord of the Flies)
- Parsons (Structure of Social Action)

# Economists Approach

- Although economists typically dispense with the “thin veneer” explanation, instead gravitating toward repeated game explanations of why we don’t live in a Hobbesian war of all against all, many retain the assumptions about innate human behavioral predispositions.
- In its basic assumptions about human nature, this is surprisingly similar to “thin veneer” anthropologists and sociologists, whose approaches economists have often been wont to disparage
- The ways in which this innate human nature is controlled differ. For anthropologists and sociologists, it’s enculturation and socialization: processes driven by teaching/learning and imitation
- For economists, it’s typically rational play within an indefinitely repeated game

# Alternate View

- An alternate view is that humans are biologically predisposed against harming conspecifics, and that it is only certain types of experience, conditioning, or stimuli that will, for most people, overcome these restraints.
- Moreover, humans are weakly predisposed to provide affirmative assistance to nonkin, but this weak predisposition can be strengthened through training.
- Which of these views about essential human predispositions is correct is one of the most fundamental questions in the social sciences.

# Cognitive Modularity

- Both experimental and observation evidence reinforces the appeal of the idea of cognitive modularity, the view that thought and behavior are influenced by different “mental organs.”
- With respect to behavior, these usually align in the counsel they provide.
- But not always, and focusing on circumstances where guidance conflicts – Prisoners Dilemmas are examples – offers a route towards building a more coherent behavioral science.

# Behavioral Economics

- Humans are predisposed to solve prisoners dilemmas surprisingly easily, at least compared to what we as economists might otherwise expect.
- Throwing caution and arguably prudence to the wind, we trust and rely upon each other, and by and large we avoid physically harming each other, even when the appeal of gain or the prospect of insuring against loss might suggest we do otherwise.
- And we do this even when, as is generally the case among adults, we are not so closely related that these behaviors could be accounted for by Hamiltonian kin selection.
- To be sure, the understandable appeal of defection sometimes wins out, but more often than not, it doesn't, to the collective benefit of the players involved.

# Legacies of Group Selection

- Human populations carry genes at relatively high frequency that could not have risen from low to high frequency without the operation of group selection at some earlier stage of our evolutionary history
- The fact that these genes exist at high frequencies and under certain circumstances can now be sustained by selection at levels no higher than that of the individual organism can disguise the historical importance of group level selection in forming human behavioral propensities

# Limits of Evolutionary Game Theory

- Distinction between explaining how a predisposition towards a strategy is sustained by frequency dependent selection and how, upon first appearance, it survives and rises in frequency.

# Limits of Evolutionary Game Theory

- Within a population randomly playing one shot PDs with each other, there is no way that the replicator dynamic could allow cooperators to become established in a population of defectors.
- One has to appeal to group or multilevel selection for a compelling explanation for how what I think is a biological foundation for these proclivities
- Why isn't organism level selection adequate?
- Why isn't cultural group selection enough?

# Economist Explanations

- Economists typically explain this as rational behavior within an indefinitely repeated game
- Problem: for a game actually to become “indefinitely repeated,” players have to successfully negotiate the first iteration.
- Absent that, particularly if one or both players are dead, the game might well end up one shot.

# Anthropological/Sociological Explanations

- Thin veneer of civilization keeps us from tearing ourselves apart
- Not necessarily inconsistent with economists' assumptions that humans are innately self interested
- But mechanism of control differs: thin veneer, as instantiated in culture, norms, institutions, rather than rational play within a repeated game

# Problems with Purely Cultural Explanation

- Common ancestor of three chimpanzee species must have had behavioral inhibitions against killing conspecifics, else how did that species survive?
- But “invention” of culture took place perhaps half a million years ago
- These inhibitions can't be purely cultural
- They must, in part, have a biological substrate

# Henrich et al

- I have a rather different take on the Henrich et al cross cultural experiments.
- The appeal of experimental methods is that they offer the prospect of controlling for all of the myriad confounds that can make it difficult to interpret observational data.
- In other words, one observes cooperation in what might appear to be PD like situations among humans. They don't always shoot first and ask questions later. Aha, but people say, that's individually rational because people are in a repeated game. Or, it is argued, it's because people have invested in their reputation.
- The advantage of running a one shot PD game in a laboratory is that one controls for repetition and reputation by making the game anonymous.

# Henrich et al

- Laboratory experiments are in some respects curious instruments with which to document cultural differences, since if we accept that there are no significant genetic differences among (as opposed to within) human groups, then persisting group differences in behavior in these games reflect partial failure of our methods. If one wants to study cultural differences, why use tools that were originally intended to abstract from them?
- The interpretation of the variance in group averages as cultural poses a problem for behavioral economists. If the variation is a purely cultural phenomenon, what is to stop us from concluding that the average level of behavior across all subject populations, what one might take as an estimate of species typical predispositions, is also an entirely cultural phenomenon? But if that is so, then the power of the large body of experimental literature referenced that challenges the selfish actor part of the standard economic model disappears. We are back to arguing that we are innately selfish in all arenas save those in which kin selection operates, and it is only a thin veneer of culture and civilization that keeps us away from each other's throats.
- I think this position is wrong.

# Different Types of Norms

- Skyrms is concerned with studying equilibrium selection methods in games in which coordination plays a large role.
- This approach makes most sense for pure games of coordination, where neither party prefers one or another outcome. Deciding which side of the road drive on, or as in the origin of language, agreeing on what a specific verbal utterance means (this is relevant to Skyrms' second paper).
- There is another range of norms where different equilibria benefit one or another player disproportionately (as in the Nash bargaining game or the ultimatum game)
- And finally, there are norms which counsel the play of a strictly dominated strategy, as in the one shot PD or in multiplayer voluntary provision of public goods games, which are particularly relevant for problems of managing the commons
- The analytical methods that might shed useful light on the first and possibly the second type of norms may not be adequate to help us understand the third.