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444 Lecture 19

O'Connor Chapter 6

Brian Weatherson

3/21/23

Day Plan

(3, 3)

Banking is a confidence trick. You put money in the bank today because you are confident you can take it out tomorrow; to you, a dollar that you have deposited in the bank is just as good — just as much *money* — as a dollar bill in your wallet. If you show up at the ATM at any time of day or night, you expect it to give you your dollars. But the bank doesn't just put your dollars in a box and wait for you to take them out; the bank uses its depositors' money to make loans or buy bonds, and just keeps a little bit around for people who need cash. If everyone asked for their money back tomorrow, the bank wouldn't have it. But everyone is confident that, if *they* ask for their money back tomorrow, the bank *will* have it. So they mostly don't ask for it, so when they do, the bank *does* have it. The widespread belief that banks have the money is *what makes it true.*

The intro to Matt Levine's newsletter from last Friday

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Two Models of Bank Runs

1. It is a prisoner's dilemma game. Everyone would prefer that everyone else keep their money in, but they would prefer to withdraw their money.

Two Models of Bank Runs

1. It is a prisoner's dilemma game. Everyone would prefer that everyone else keep their money in, but they would prefer to withdraw their money.

2. It is an **iterated** prisoner's dilemma game. In the very short term, it's like in 1, but in the longer term, it makes (selfish, prudential) sense to develop an ethos of cooperation.

Two Models of Bank Runs

Which is correct?

Two Models of Bank Runs

Which is correct?

- Answer: Whichever everyone believes is correct.

What is the Iteration?

- Future banking relationships?

What is the Iteration?

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- Any kind of future business relationships?

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What is the Iteration?

- Future banking relationships?

- Any kind of future business relationships?

- Any kind of future relationships?

One of the hardest things around here is knowing when to make multiple interactions part of the same game.

An Alternative View

Tim Harford in the *Financial Times* said that the situation is not a Prisoners Dilemma, it's a Stag Hunt.

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An Alternative View

Tim Harford in the *Financial Times* said that the situation is not a Prisoners Dilemma, it's a Stag Hunt.

- This might not be a rival view.
- Brian Skyrms argued (as part of his campaign to get philosophers to take Stag Hunts more seriously) that iterated PDs just are Stag Hunts.

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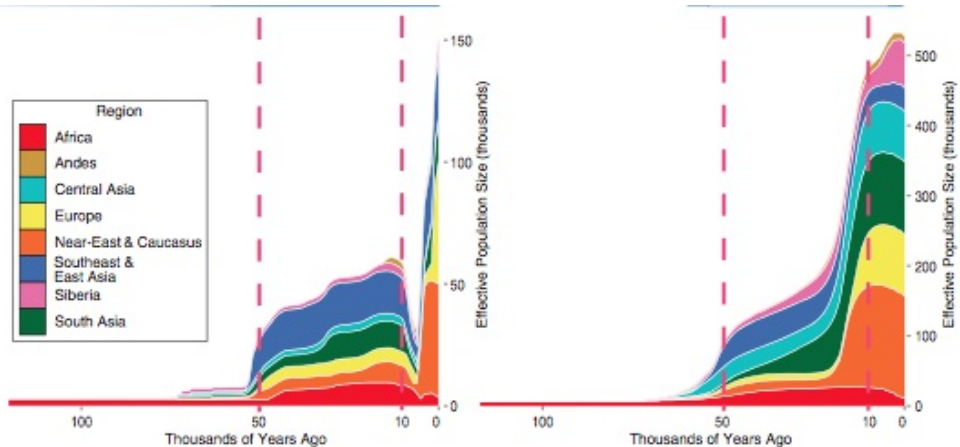Utility Scales are Arbitrary
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Day Plan

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Effective male (on left) and female (on right) population sizes over time

Sources

- The picture and description are sourced from Doug Jones's blog - https://logarithmichistory.wordpress.com/2015/09/27/the-patriarchal-age/.

- The actual credit for the work goes to a paper by Monika Karmin et al, "A recent bottleneck of Y chromosome diversity coincides with a global change in culture"m *Genome Research* 2015 Apr; 25(4): 459–466.

- And I learned about all this from Brad DeLong's book *Slouching Towards Utopia*.

Consequences

I've mentioned occasionally that I thought O'Connor really downplays the physical effects of pregnancy, childbirth, and nursing on the development of inequality.

- They are there, perhaps as reasons for the asymmetries that get everything going, but they are a bit the ghost haunting the picture.

- But I had been running together two different concerns.

Two Consequences of Pregnancy

1. Within a particular male/female child-having couple, there are physical reasons to prefer one division of labor over another. That doesn't necessitate inequality, let alone justify it, but you can see how it could make it possible.

2. The physical constraints imposed by pregnancy put a fairly hard cap on the number of children a woman can have, but not on the number of children a man can have.

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A Four Player Game

The players are two men and two women.

- One of the equilibria is that both women have children with one of the men, and are minimally supported by, but extremely subservient to, one of the men. The other man gets nothing.

- Open question: Could this kind of outcome be a large basin equilibrium.

Empirical Question

- We know that across the world, the *mean* status/wealth of men in any society is higher than that of women.

- Do we know whether that claim is also true for the *median* of status/wealth?

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Empirical Question

How many societies had the following structure?

- Life is very hard, barely above subsistence level, for the vast bulk of the population, all of whom are more or less at the same low level of welfare.

- There is a privileged minority who have a much higher level of welfare.

- They are all men.

What Are We Explaining Here?

The aim of O'Connor's book is to explain gendered inequality, and it's clearly true that this is a feature of approximately all human societies.

- It's also true that in recent Western socities, this group-level inequality was reflected in individual inequalities. The median man was better off, sometimes much better off, than the median woman.

- O'Connor's models I think are aimed to explain that kind of distribution.

- But is it the standard one? Maybe, but maybe not!

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Day Plan

Benefits to Learning

- In normal situations, there is a benefit to learning more about your environment.

- Indeed, there is a famous proof of this, that makes reasonably weak assumptions.

- But in certain game theoretic contexts, the proof fails.

- It is possible to benefit from being slow to learn.

Chicken

Imagine a real-life version of Chicken with each player playing the following strategy

- Stay straight unless you know that the other player will be staying straight.

Chicken

Imagine a real-life version of Chicken with each player playing the following strategy

- Stay straight unless you know that the other player will be staying straight.

In this case, the slower learner will win.

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Red King Effect

- This is what O'Connor is calling the Red King effect.

- I mean this fairly literally; the games she is using in these models are I think versions of Chicken.

- And the reason fast learners do badly is that they learn that the other party is doing something that will be disasterous if they both do it.

Significance of This

It's really hard to see how this can be a big part of the story of gender inequality.

1. The magnitudes are small.

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Significance of This

It's really hard to see how this can be a big part of the story of gender inequality.

1. The magnitudes are small.

2. The circumstances in which it arises are fairly specific, and gender inequality is everywhere.

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Small Populations

The key insight, which seems right, is that small groups learn about big groups more rapidly than big groups learn about small groups.

- Australian immigrants in America can tell you a lot more about American social practices than native-born Americans can tell you about Australian immigrants.

- And something similar I suspect is true about American immigrants in Australia.

Small Populations

The key insight, which seems right, is that small groups learn about big groups more rapidly than big groups learn about small groups.

- And maybe, maybe, the result of that learning means that the small group will head to the nearest equilibrium, even if it is one that is bad for them.

Day Plan

Clarification

I actually didn't quite understand the game on page 141.

- I think it's like the bargaining game from chapter 5 except one meets people from both types.

- And hence one's strategy can (I think) be sensitive to the type of player on the other side.

- Presumably we see strategies in which one does something other than 50/50 in intra-type play die out, though I'm not really sure.

Lab Experiment

But then I really couldn't understand the experiment on page 142.

- If you only interact with out-group members, there shouldn't be an effect of group size.

- What matters is that these out-group interactions are common for one group and rare for another.

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A Quote

In all three cases, the fact that one side sees more makes them less reactive, and less likely to change strategies quickly. As Hwang et al. (2014) put it, "a larger scope of vision among the well off reduces their responsiveness to the idiosyncratic play of the poor"

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Puzzle

- I don't really get this.

- I see how it works mathematically; if you're just reacting to what happened in the very last round, then you'll bounce around all over the place.

- But who is that a decent model of?

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Alternative Real-World Case

- Everyone remembers their last X interactions.

- When dealing with group g, they take the interactions with g of those last X and take them to be typical.

Alternative Real-World Case

- Everyone remembers their last X interactions.

- When dealing with group g, they take the interactions with g of those last X and take them to be typical.

- But now the small group will be the one who has less random moving from one node to another.

- I feel that this is one of those mathematical models you could just as easily have used to 'explain' why group differences fade over time as why they stay.

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Day Plan

Page 155

Look at the table in figure 6.14.

- In classical game theory, that is a perfectly symmetric game.

- That's because utility scales are only defined up to positive affine transformation.

- And so here the parties get the same return (up to transformation) as each other.

Classical vs Evolutionary Game Theory

Here I think it's really important that we're using evolutionary models.

- Evolutionary payout functions do not have the same invariance profiles as classical payout functions.

- It really matters that one party gets an extra bonus.

- And sure, I guess that makes sense.

- But it's worth noting how far we've left anything like classical game theory.

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Big Picture

- Sometimes it seems that O'Connor is not making the hyper-rationality assumptions characteristic of classical game theory. That's a very good thing.

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Big Picture

- Sometimes it seems that O'Connor is not making the hyper-rationality assumptions characteristic of classical game theory. That's a very good thing.

- But sometimes it seems that she is making some strong irrationality assumptions. And that's less obviously good.