

# 444 Lecture 9.1 - O'Connor Chapter 1

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Brian Weatherson

# Day Plan

Gender Division

Types

Complementary and Correlative Games

Norms and Conventions

Hawk-Dove

Notes

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# Genders in Society

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# Genders in Society

- The ubiquity of gender divisions in societies is really remarkable.
- What other things are this ubiquitous?
- Definitely language use, which is itself remarkable.
- And some age-related divisions, though with more variable manifestations.
- Language is the closest thing to gender; we see it in all societies, but the way we see it varies.

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- Religion
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But note two things about these.

1. Not nearly as ubiquitous.
2. They complement gender, not replace.



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# Games with Types

- Games with types are sort of 'between' two familiar kinds of games in complexity.
- One is games where each player has a full awareness of the identity of who they are playing with, and can plan strategies that discriminate among these other players.
- At the other end is where a player just has to pick a strategy in complete ignorance of who the other player is.
- With types we get in between; you don't know who the other player is, but you know they are of type  $t$ .

# Symmetry

- The formal effect of this is to open up a new range of **symmetric** equilibria.
- Without types, the only equilibrium in a complementary coordination game is really bad.

	A	B
A	0, 0	1, 1
B	1, 1	0, 0

- The only symmetric equilibrium is that we both play the mixed strategy half-A/half-B, with a return of 0.5.

# Types

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- Now imagine that we will first be assigned type-A or type-B, with probability 0.5 for each, and that types will be visible.
- This opens up a new symmetric equilibrium: Play your type if the other is different, randomise if the other is same.
- And this has an expected return of 0.75.

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- This opens up a new symmetric equilibrium: Play your type if the other is different, randomise if the other is same.
- And this has an expected return of 0.75.
- This will be called a **population equilibrium** in chapter 2, and we'll return to it.

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## A Correlative Game

	Bach	Stravinsky
Bach	2, 1	0, 0
Stravinsky	0, 0	1, 2

## A Complementary Game

	Favorite	Other
Favorite	0, 0	2, 1
Other	1, 2	0, 0



# The Same Game?

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- Not necessarily; depending on how we set the game up.

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- Question: Can I call up Barack Obama?
- Positive answer: it's just a matter of dialing the right number, and I have the dexterity to hit the numbers.
- Negative answer: I don't know his phone number!
- We're working with a system where the negative answer is the right one; which seems very natural.

## Correlative and Complementary

- Lewis: Correlative vs Complementary is just a matter of relabelling, it doesn't reflect a deep difference.
- O'Connor: That relabelling might convert things that the player can do under that very description into things they cannot do under that description.

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# Norms and Conventions

- The distinction here is tricky.
- Conventions are things where everyone goes along because they'd expect to do worse as long as everyone else is following the convention.
- Norms are things where everyone goes along because they'd expect to do worse as long as everyone else is endorsing the norm.
- These seem really similar.

# Norms and Conventions

- The difference is why they expect to do worse if they violate.
- Roughly, social norms are where one expects to do worse because of punishment behavior by others.
- Conventions are where you do worse because of a failure to coordinate. The restaurant won't punish me for knocking on the door at 3 in the morning to see if they are open, they just won't open up. (Because they aren't there!)

## Examples of Norms and Conventions

- I'm actually not convinced that driving on the socially approved side is a norm in this sense; the downsides are much more due to others behaving normally than due to punishment.
- There is an intermediate case - where we internalise the convention, and violating it generates guilt.
- This should probably go with the punishment - not all punishments are by others.

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# Hawk-Dove

- I haven't talked about this already, but I possibly should have.
- When I talked last week about whether some games were Prisoners' Dilemma or Stag Hunt, there was a third option, Hawk-Dove.
- And maybe that's the right model for some cases we discussed.

# What is Hawk-Dove

1. Everyone wants the other person to be Dove; that's the cooperative move.
2. If everyone is a Hawk, it's a disaster. It's even worse than in PD.
3. But if everyone is a Dove, it's better to defect and play Hawk.  
That's like PD and unlike SH.

Everyone wants to be the only defector.

## Simple Models

- We will come back to Hawk-Dove in chapter 2, so we'll talk about it more then.
- But for now it's good to have simple models in mind.
- Don't think This coordination problem isn't PD, so must be SH.
- It could be Hawk-Dove instead.

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# Military

- Just one small note this week.
- Is it really true that militaries need strict hierarchies to be successful?
- I think this turns on what you call a 'military'.
- The slave rebellion in what's now Haiti was pretty successful, without a particularly clear hierarchy.
- The guerilla war the Spanish people waged against Napoleon was much more successful than anyone their own army did.
- I don't think this makes a big difference to the story, but I was surprised to see this stated so categorically.