# 444 Lecture 7.6 - Honest Signaling

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- Change the game so that what options Sender has is a function of what type Sender is.
- In the extreme case, one type of Sender has two options, the other has one.
- In this case, Sender doing the thing that only their type can do is called **honest signaling** or **indexical signaling**.

The Chase

- Sender sees that Hearer is trying to catch them, and it will be bad if Hearer succeeds.
- Maybe Hearer is a mugger, or maybe they are a cheetah and Sender is a springbok.
- Sender is either Strong or Weak.
- If they are Strong, they have the option of Jumping in the air before running away.
- This will slow them down, but will display their type to Hearer.

Payoffs

- Sender loses 10 if they are chased and get caught.
- Hearer gains 5 if they catch Sender; but they lose 3 if they chase and fail (this might be an opportunity cost).
- Fast sender has a 20% chance of being caught if they don't Jump, and a 30% chance of being caught if they Jump.
- Slow sender can't jump, and has a 50% chance of being caught.

–3,–0.6   0,0

C   NC

Jump

1   0.4   c   0.6   1

Run   Run

C   NC   C   NC

2

–2,–1.4   0,0   –5,1   0,0
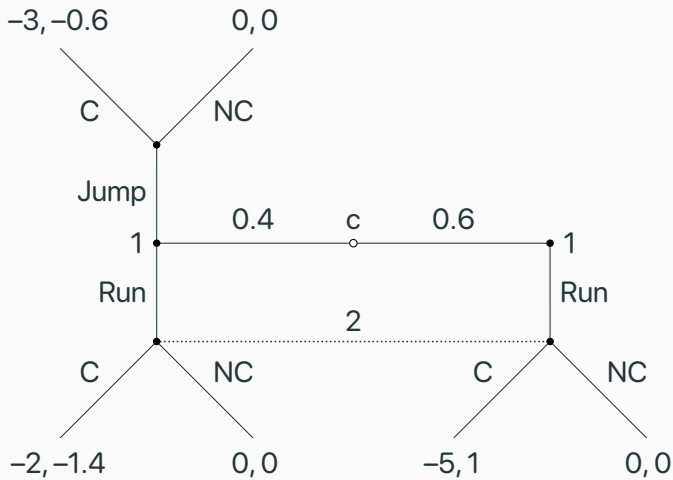
Equilibria

- This one really looks like it should only have one equilibrium.
- If everyone does the same thing, i.e., Run, then Hearer's expected utility from Chasing is positive, so they will Chase everyone.
- But Fast Senders don't want this; they would prefer Jump plus No Chase to Run plus Chase.
- And if they Jump, Hearer will know it isn't worth Chasing.
- So the only sensible equilibrium is that Fast Senders Jump, and Hearer chases all and only Senders who Run (rather than Jumping).

- Could there be an honest signaling explanation of why there is a college wage premium?
- Maybe; it seems relevant that some people aren't admitted to college and others could not complete it.
- But I don't know what such an explanation could look like.

Can't/Won't

- In real life the boundary between a game where signaling is costly for one type and where it is impossible can be hard to draw.
- Especially for non-human animals, what exactly does it mean to say they could do something but choose not to because it is too expensive, rather than say that they can't.
- And for humans, we don't even consider some things to be viable options because they are prohibitively expensive.
- Are these cases where something is not an option, or where it is rationally not chosen for expense.
- It isn't clear that much could, or should, turn on this.

For Next Time

- For next class I don't have slides, just a long-ish handout.
- Next week we will look more closely at Iterated Prisoners' Dilemma.