

Information Transmission Games

Harry R. Lloyd, August 1, 2019

signalling	proving who you are
reputation	pretending to be someone you aren't
cheap talk / persuasion	trying to convince a listener with a conflict of interest, via payoff-irrelevant messages

I The Chain Store Reputation Game

I.1 Setup

A game of perfect information; at the t th stage, the t th possible Entrant first decides whether or not to enter, and the Incumbent decides whether or not to compete.

I.2 Features of the SPE

A sane-type Incumbent must not imitate the crazy type too perfectly: if the sane-type incumbent plays Fight with probability 1, then playing Fight does not build a reputation for craziness.

When a sane-type incumbent imitates the crazy type at $t = 1$ by playing Fight, this act must not deter the second entrant with the probability probability 1, because in that case a sane incumbent would be tempted to overuse the deterrent.

I.3 Fudenberg & Levine's Theorem

Suppose that there are T stages (and so T short-lived opponents).

If the long-lived player P1 has the crazy commitment type with positive prior probability,

then: there is a unique PBE,

and as $T \rightarrow \infty$, the average payoff of P1 in the unique PBE converges to her Stackelberg payoff:

$$\max_{a_1} [u_1(a_1, BR_2(a_1))]$$

2 The Crawford-Sobel Cheap Talk Game

— see slides.