Competitive special interest groups are the key to democratic efficiency.

$\Pi_1(q_1,q_2)$, $\Pi_2(q_1,q_2) \Rightarrow$ generate reaction functions

Let $D = a - b(q_1 + q_2)$

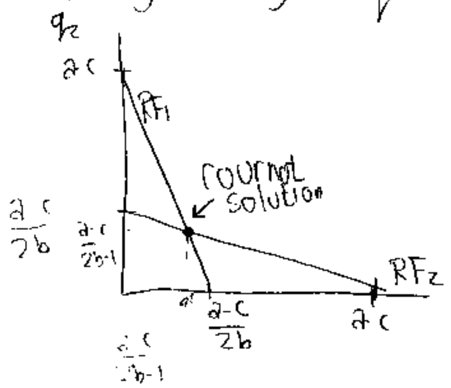
$$\Pi_1 = p\cdot q_1 - c\cdot q_1$$
$$= (a - bq_1 - bq_2)q_1 - cq_1$$
$$= aq_1 - bq_1^2 - bq_2q_1 - cq_1$$

(q_1): $a - 2bq_1 - q_2 - c = 0$

$\Rightarrow 2bq_1 = a - q_2 - c$

$\Rightarrow q_1 = \frac{a - q_2 - c}{2b} = \frac{a-c}{2b} - \frac{q_2}{2b} = RF_1$

By symmetry $q_2 = \frac{a-c}{2b} - \frac{q_1}{2b} = RF_2$



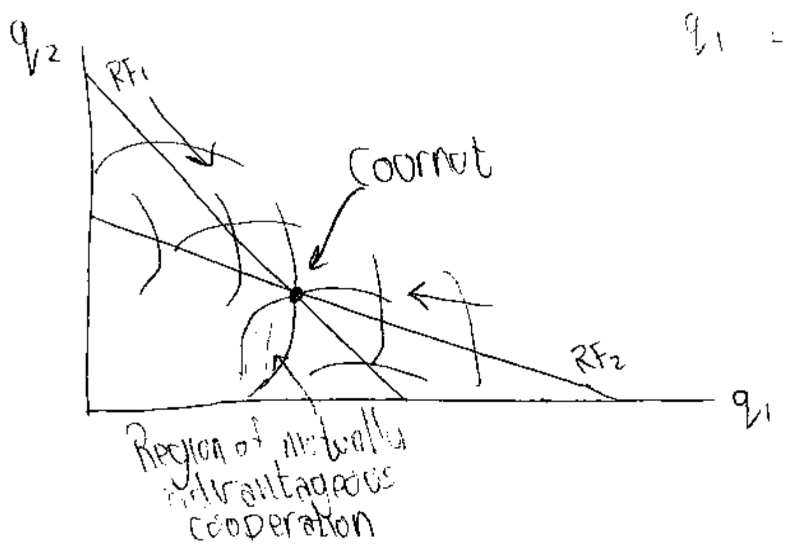
$q_1 + \frac{q_2}{2b} = q_2 + \frac{q_1}{2b}$

$\Rightarrow 2bq_1 + q_2 = 2bq_2 + q_1$

$\Rightarrow q_1 = q_2$

$\Rightarrow q_1\left(1 + \frac{1}{2b}\right) = \left(\frac{a-c}{2b}\right)$

$q_1 = \frac{a-c}{2b+1} = q_2$



Stackelberg: 2 reacts to 1, but 1 does not react to 2.

$$q_2 = \frac{a-c}{2b} - \frac{q_1}{2b}$$

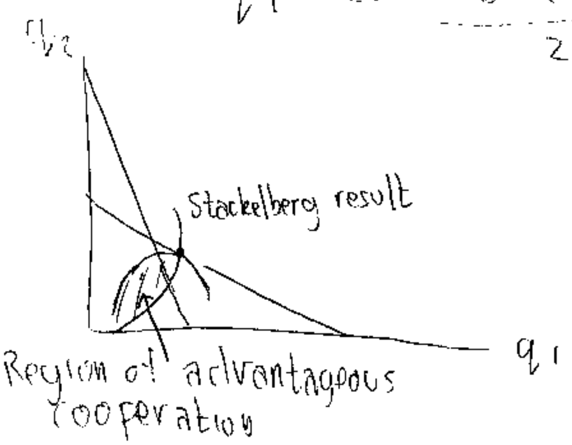
$$\Pi_1 = (a - bq_1 - bq_2)q_1 - cq_1$$

$$= aq_1 - bq_1^2 - bq_1\left(\frac{a-c}{2b}\right) - \frac{bq_1^2}{2b} - cq_1$$

$$= aq_1 - bq_1^2 - \left(\frac{a-c}{2}\right)q_1 - \frac{q_1^2}{2} - cq_1$$

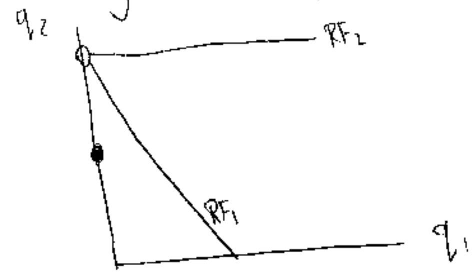
$$(q_1): \quad a - 2b - \left(\frac{a-c}{2}\right) - q_1 - c = 0$$

$$\Rightarrow \quad q_1 = \frac{2a - 4b - a + c - 2c}{2} = \frac{a-c}{2} - 2b$$



The region of mutually advantageous cooperation is larger under Stackelberg than under Cournot

Choosing an optimal reaction function:



Give up some rationality and develop some principles.

- This is how Rockefellar worked
- What is the most profitable self-image?

Leader $x_1 = f_1(x_2, \ldots, x_n)$ $\quad x_i \in X_i$ finite (action set) $\forall i$

$$f_1 \in \mathcal{F}_1 \equiv \{f : X_2 \times \ldots \times X_n \rightarrow X_1\}$$

Person 1 wants to $\max\limits_{f_1 \in \mathcal{F}_1} u_1(f_1)$

The courts stopped enforcing predation, because economists "showed" that it was irrational

Hierarchy: $x_1 = f_1(x_2, \ldots, x_n)$

$x_2 = f_2(x_3, \ldots, x_n)$

$\vdots$

$x_{n-1} = f_{n-1}(x_n)$

$x_n = x_n$ Homo economicus

The procedure through which these reaction functions will be chosen is evolution.

· Schools as spreaders of broadly rational irrationalities.

This is from the Thompson-Faith paper.

Suppose x^* is not P.O., where $x^* = (x_1^*, \ldots, x_n^*)$ is a solution. Then individual 1 could have chosen $f_1 \neq f_1^*$ such that

$x_1 = x_1^*$ if $(x_2, \ldots, x_n) = (x_2^*, \ldots, x_n^*)$ and

$x_1 = x_1^0$ otherwise.

Similarly, 2 could have chosen $f_2 \neq f_2^*$ s.t.

$$x_2 = \begin{cases} x_2^* & \text{if } (x_3, \ldots, x_n) = (x_3^*, \ldots, x_n^*) \\ x_2^0 & \text{otherwise} \end{cases}$$

$\vdots$

$$x_{n-1} = \begin{cases} x_{n-1}^* & \text{if } x_n = x_n^* \\ x_{n-1}^0 & \text{otherwise} \end{cases}$$

And x_n would pick x_n^0. Then we would have $(x_1, \ldots, x_n) = (x_1^0, \ldots, x_n^0)$. But this contradicts the original reaction fcns being optimal $\square$