**EDITORIAL FAVORITISM**

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**I. Model 1**

· Two Journals:
- · High tier (H), low tier (L)
- · Payoffs to publication higher in H (more later)

· Authors
- · Each write one paper per period
- · Each choose two quality attributes of their paper
  - · r affects likelihood of publication
    - · attribute that referees care about
    - · quality of exposition,
    - · innovation on existing literature, etc.
  - · q affects likelihood of long-term impact, citation
    - · long-term impact rewarded in academic marketplace
    - · editors / referees do not observe signal of q
- · Probability of "high impact" depends on q and outlet
  - · f(q,H) = probability of high impact in high tier journal
  - · f(q,L) = probability of high impact in low tier journal
  - · $f(q,H) >> f(q,L)$, $f_q(q,H) >> f_q(q,L) > 0$, $f_{qq}(q,t) \leq 0$
    - · High tier publication increases likelihood of discovery of q-quality
  - · Assume (for simplicity) that "high impact" is binary; either there is "high impact" or not.
- · Author payoffs:
  - · $U_H$ = direct utility payoff to high tier publication
  - · $U_L$ = direct utility payoff to low tier publication
  - · $U_q$ = (present value) utility payoff to high impact
  - · $U_H >> U_L$ : Higher payoff to high tier
  - → Utility to H publication = $U_H + f(q,H)\, U_q = U^{H*}$.
  - → Utility to L publication = $U_L + f(q,L)\, U_q = U^{L*}$.
- · Authors have ability a, assumed binary, $a \in \{l,h\}$
  - · l = low ability
  - · h = high ability
- · Author cost of quality (in utility units): c(q,r,a)
  - · increasing, concave in (q,r)
  - · $c_a<0$, $c_{ra}<0$, $c_{qa}<0$: higher ability lowers cost of quality
- ·Each author is in one of two groups
  - · 0 = "out of network"
  - · 1 = "in network"
- · Fraction of high ability authors in group $i \in \{0,1\}$ is $\gamma_i \in (0,1)$
  - · $\gamma_1 > \gamma_0$.
  - · in-network group has higher fraction of high ability members
  - · e.g., Ivy League
- · Number of authors in group $i \in \{0,1\} = N_i$.
- · Because payoff to H is higher, all authors

· submit first to H
· if rejected at H, then submit to L

· Editorial Process

(A) Low tier journal (L):

· Interested here in access to high tier journal; hence, will treat low tier process as simply as possible.

· Probability of publication in L = $P_L(r)$, where $P_L'(r) \geq 0$.

(B) High tier journal (H):

· Space is constrained to a given number of papers.

· Editor and referee observe author's group membership $i \in \{0,1\}$.

· Referee observes and reports signal of r quality $\tilde{r}$

· Editor accepts / rejects based on (i, $\tilde{r}$) information.

· Specifically,

· on q:

· For each i, Editor has expectation of (distribution of) q investments

· $F_i$ = Editor expectation of likelihood of "high impact" by author in group i

· In equilibrium, Editor has the consistent / rational expectation

(1) $F_i = \gamma_i f(q_{hi},H) + (1- \gamma_i) f(q_{li},H)$

where $q_{ai}$ = equilibrium q of author with ability a in group i

· on r:

· Referee observes and reports signal of r quality that is correlated with both his/her prior expectation of r quality from the I group, and the "true r":

· Referee signal of r quality =

(2) $\tilde{r}(r,i,\varepsilon) = \bar{r}_i (1-\delta) + r\,\delta + \varepsilon$, where

· ε is a random variable assumed (for simplicity) to be uniform on $[-\underline{\varepsilon},\underline{\varepsilon}]$

· $\bar{r}_i$ = prior expectation of average group i r quality

· $\delta \in (0,1]$ measures extent to which signal weights "true r" (vs. prior expectation of r)

· In equilibrium, $\bar{r}_i$ is based on consistent / rational expectations,

(3) $\bar{r}_i = \gamma_i r_{hi} + (1- \gamma_i) r_{li}$,

where $r_{ai}$ = equilibrium r of author with ability q in group i

· Note: Not important that author-chosen r is "true r" or, alternately, that chosen r generates "true r" by a random process (Ellison, 2002). What is important is that the Editor considers the referee report the estimate of "true r," and this estimate is correlated with both referee's prior information and author-chosen r.

· Editor selects papers for publication that have estimated expected quality above a standard z.

· Editor weights q-quality with $\alpha \in (0,1)$ and r-quality with weight $(1-\alpha)$ (c.f., Ellison, 2002), accepting a paper when

(4) $$\alpha F_i Q + (1-\alpha)\ \tilde{r}\,(r,i,\varepsilon) \geq z,$$

where Q = quality assignment to "high impact"

· (4) implies the acceptance criterion,

(5) $$\text{Accept} \Leftrightarrow \tilde{r}\,(r,i,\varepsilon) \geq \underline{r}_i \equiv [z - \alpha F_i Q]/(1-\alpha)$$
$$\Leftrightarrow \varepsilon \geq - R_i - r\delta, \text{ where}$$

(6) $$R_i \equiv (1-\delta)\ \bar{r}_i - \underline{r}_i.$$

· (5) gives the author's probability of acceptance,

(7) $$P_H(r,R_i) = \text{probability of acceptance in high tier journal}$$
$$= 1 - G(-R_i-\delta r) = g\,(\delta r+R_i),$$

where G is the distribution function for ε and the last equality is based on the assumed uniform distribution for ε, with $g=(2\underline{\varepsilon})^{-1}$.

· Note: $R_i$ is the crucial determinant of editorial favoritism.

· In equilibrium, z will be selected to exactly fill the journal,

(8) $$\sum_{i=0}^{1} N_i\ \{\ \gamma_i\ P_H(r_{hi},R_i) + (1-\gamma_i)\ P_H(r_{li},R_i)\ \} = K = \text{journal capacity}$$

where, from (1), (3), (5) and (6),

(9) $$R_i = (1-\delta)[\ \gamma_i\ r_{hi} + (1-\gamma_i)\ r_{li}] - [z/(1-\alpha)]$$
$$+ [\alpha Q/(1-\alpha)]\ [\gamma_i\ f(q_{hi},H) + (1-\gamma_i)\ f(q_{li},H)]$$

· Order of the game
- · H Editor sets z
- · Authors each choose (q,r)
- · All authors submit to H
- · Referees report $\tilde{r}$ values to the H Editor
- · H Editor accepts / rejects according to (4)
- · Rejected authors submit to L, where each submitted paper is accepted with probability $P_L(r)$
- · Nature determines "high impact" of published papers (as described above)
- · Author utilities are realized.