

# The Swing Voter's Curse in Social Networks

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## 1. Motivation



- (i) Should you follow vote recommendations?
- (ii) Can following cause efficiency losses?

## 2. Model

$N$  (non-experts) and  $M$  (experts) linked by bipartite network  $g$

1. Nature draws

- $A$  or  $B$  with equal probability
- independent signals of experts with accuracy  $p$

2. Experts send a message  $m_j \in \{A, B, \emptyset\}$  to their non-overlapping non-expert audiences

3. All agents vote for  $A$  or  $B$  or abstain (simple majority rule)

- Common interest:  $u(A, A) = u(B, B) = 1$ ,  $u(A, B) = u(B, A) = 0$

## 3. Theory

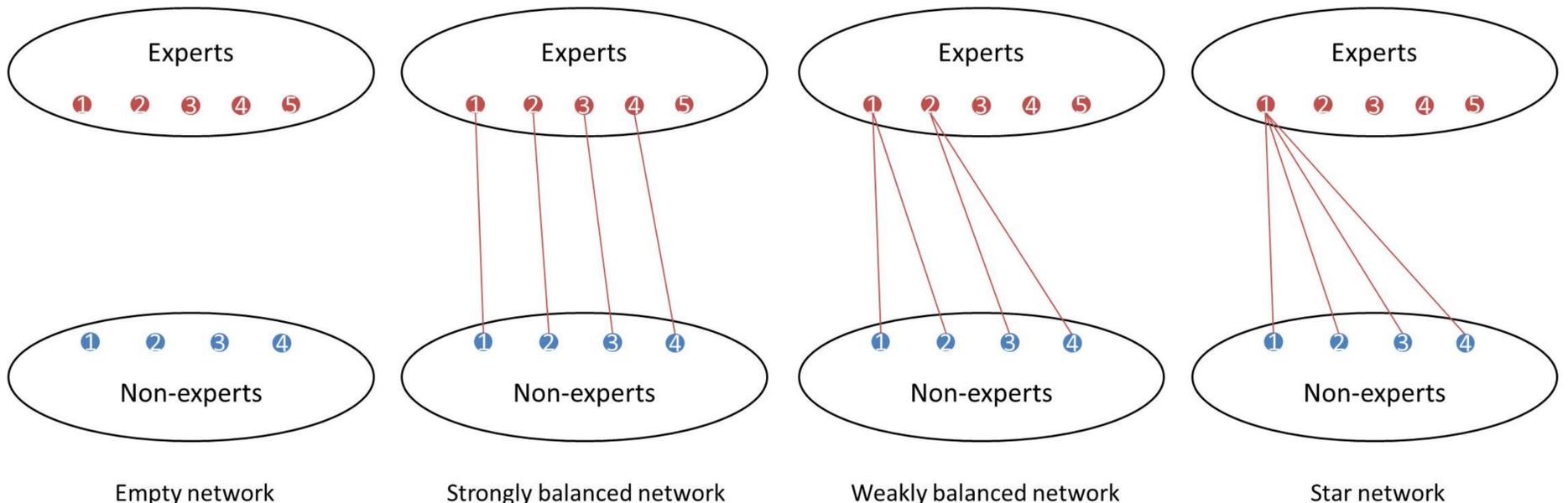
**Definition 1**  $s$  is **efficient** if it maximizes the probability of the implemented policy matching the true state.

- Focus: Perfect Bayesian equilibria; agents always condition on their pivotality

**Proposition 1** There are efficient equilibria for any network.

- Proof hint: "let the experts decide" strategy profile  $s^*$  in which all experts vote their signal and all non-experts abstain.
- Sincere strategy profile  $\hat{s}$ : Experts communicate and vote their signal. Non-experts follow their message or abstain if there is no message.

**Proposition 2** Sincere  $\hat{s}$  is an equilibrium



Non-experts follow:

80%

73%

52%

(a) IF the network is "strongly balanced" and

(b) ONLY IF the network is "weakly balanced".

Proof (a) "IF" hint:  $\hat{s}$  is efficient iff  $g$  is strongly balanced

Proof (b) "ONLY IF" hint: Swing Voter's Curse

**Proposition 3** There are networks in which  $\hat{s}$  is an inefficient equilibrium.

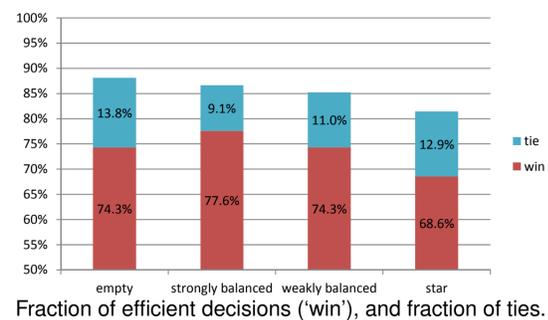
Proof hint: weakly balanced network below.

## 4. Experiment

- Hamburg, summer 2015
- 840 obs. on the network level (189 participants, 40 rounds)
- four treatments below

**Result 1** Non-experts are the less likely to vote their message the less balanced the network. (see at bottom)

**Result 2** Efficiency is lower in the star than in the empty network.



## 5. Conclusion

Pre-vote communication in a common interest setting (e.g. Federson & Pesendorfer, *AER* 1996).

- Known: Public communication fosters efficient deliberation (Gerardi & Yariv, *JET* 2007; Goeree & Yariv, *ECTA* 2011).
- **Private communication may undermine efficiency.**
- Extension: General model that seamlessly moves between private and public communication.
- Efficiency depends on balance of expertise and power.