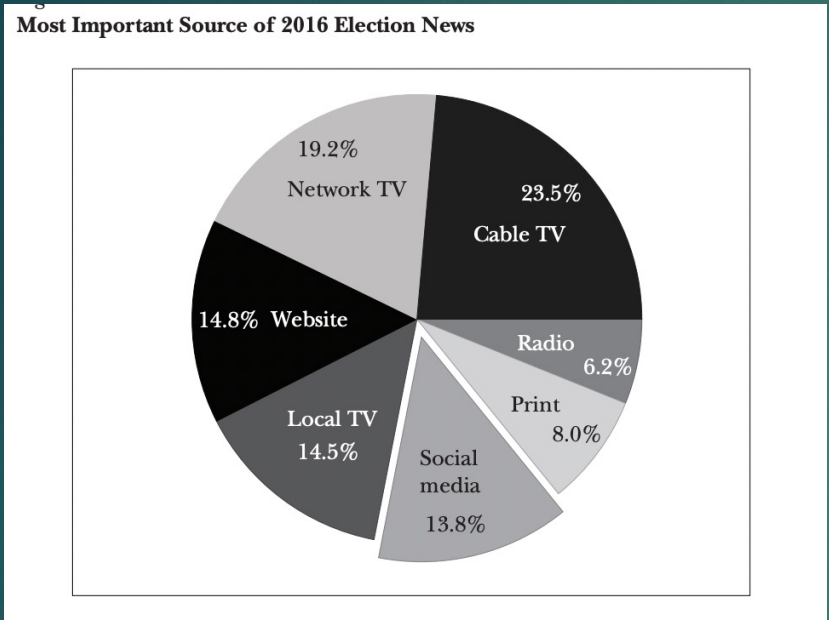
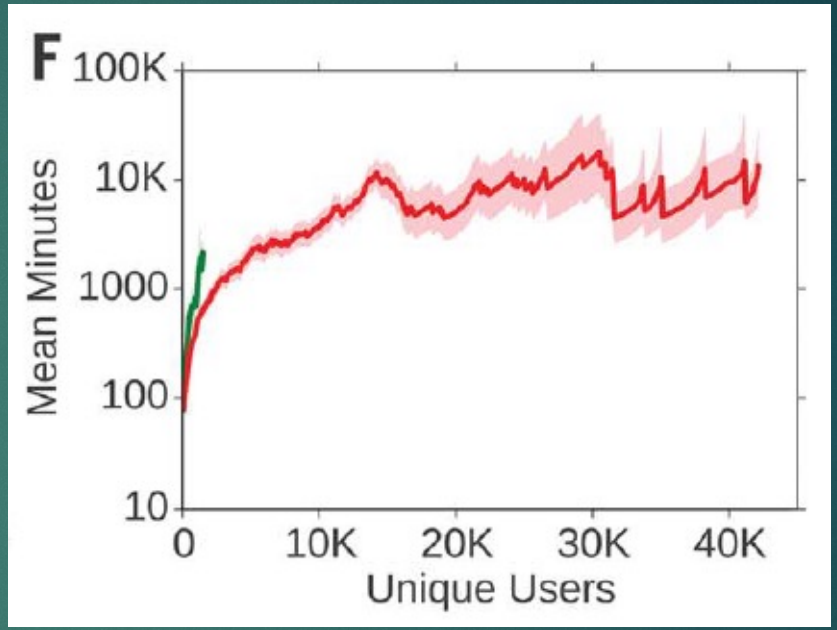
Misinformation: Strategic Sharing, Homophily, and Endogenous Echo Chambers

DARON ACEMOGLU
ASU OZDAGLAR
JAMES SIDERIUS

Motivation





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Dems Vote To Enhance Med Care for Illegals Now, Vote Down Vets Waiting 10 Years for Same Service

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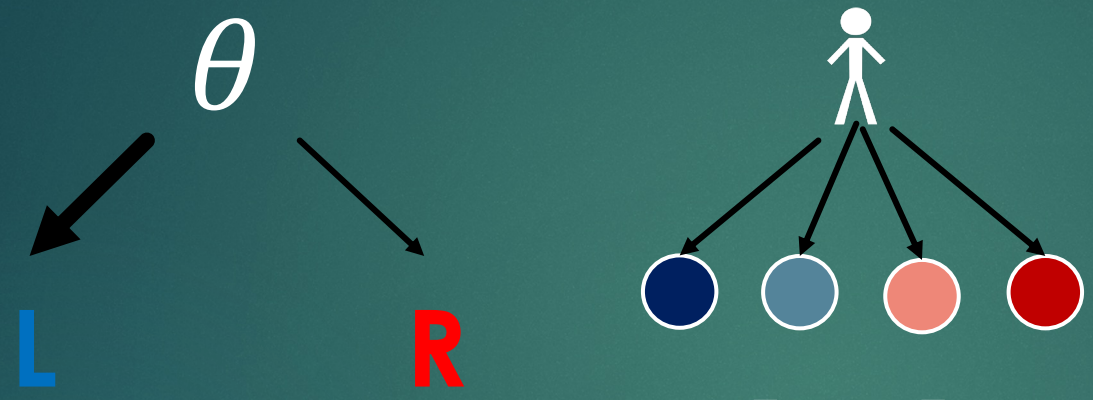
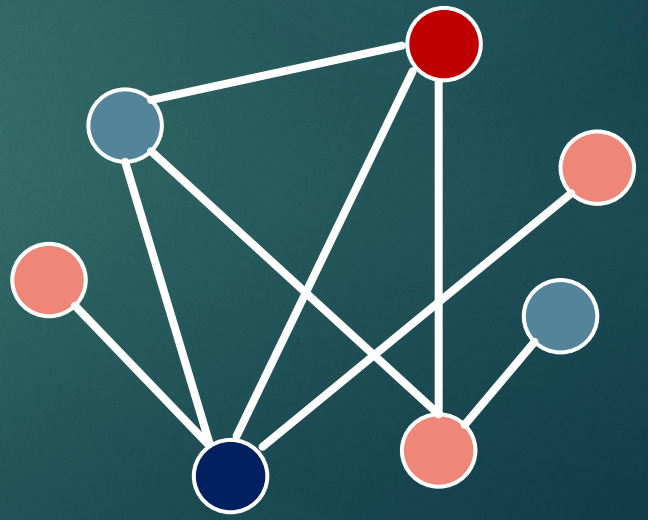
Trump Is Now Trying To Get Mike Pence Impeached

During a press conference, Trump said that if he is going to be...

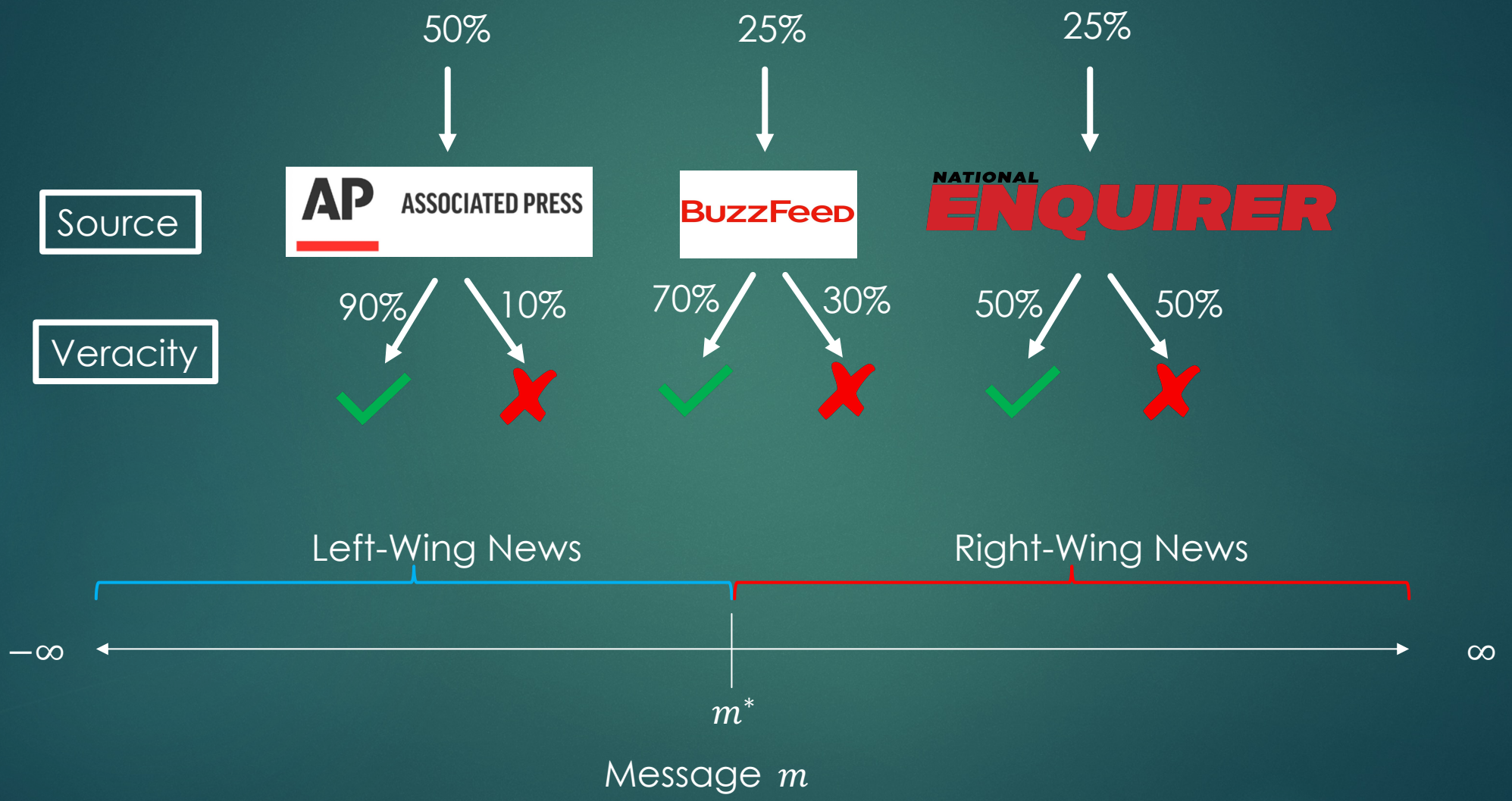
Model: Social Network



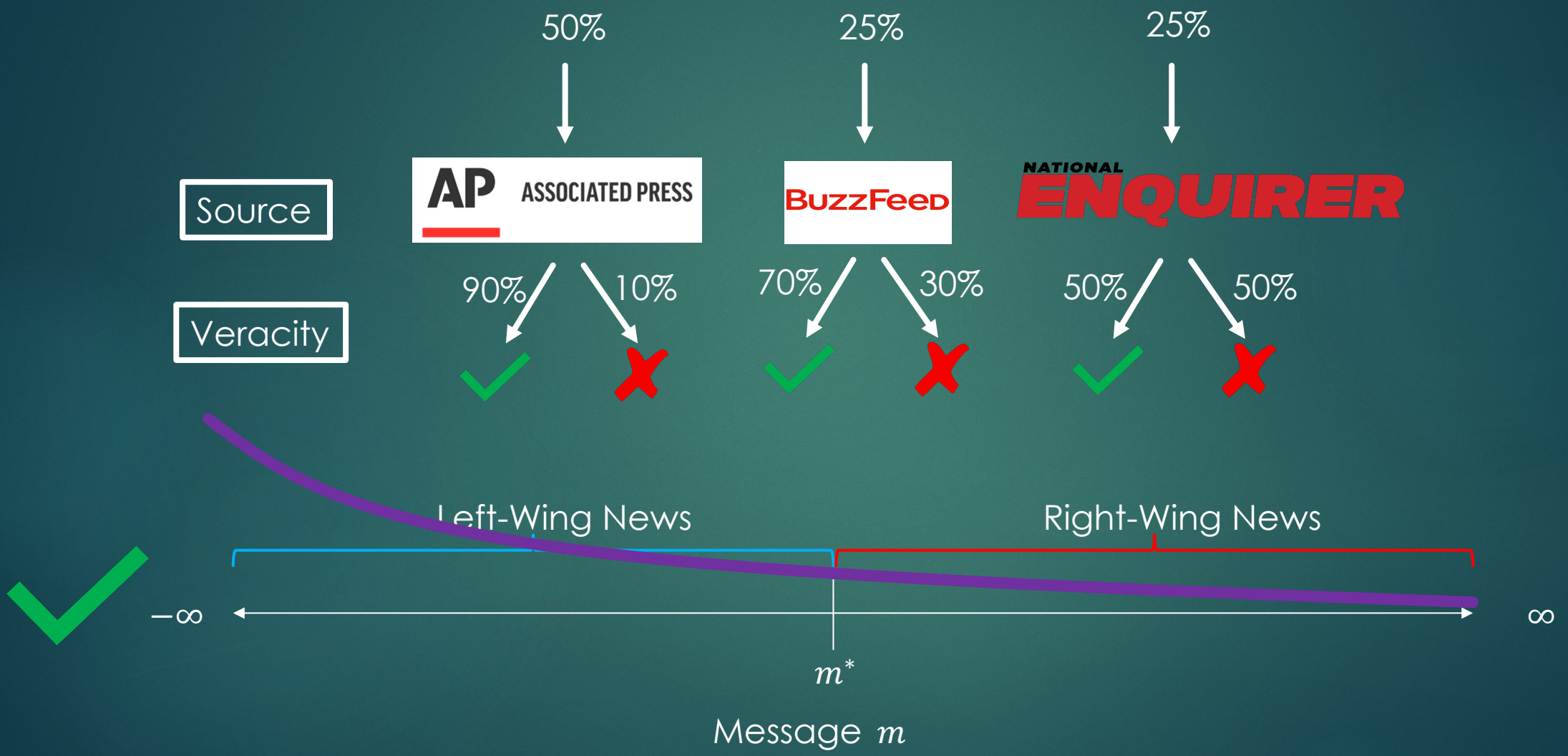
$b_i \in [0,1] \sim H_i$



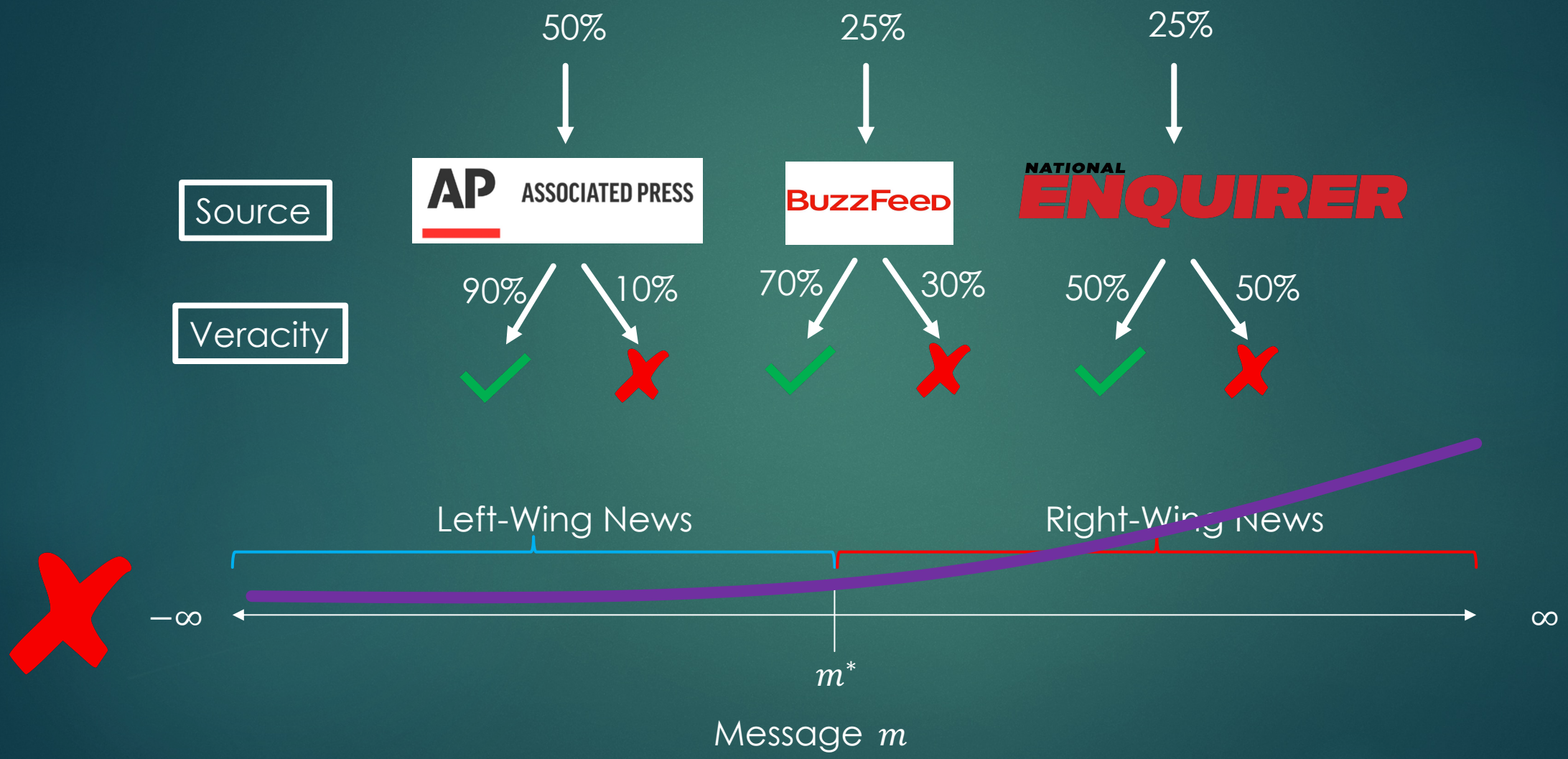
Model: News Generation



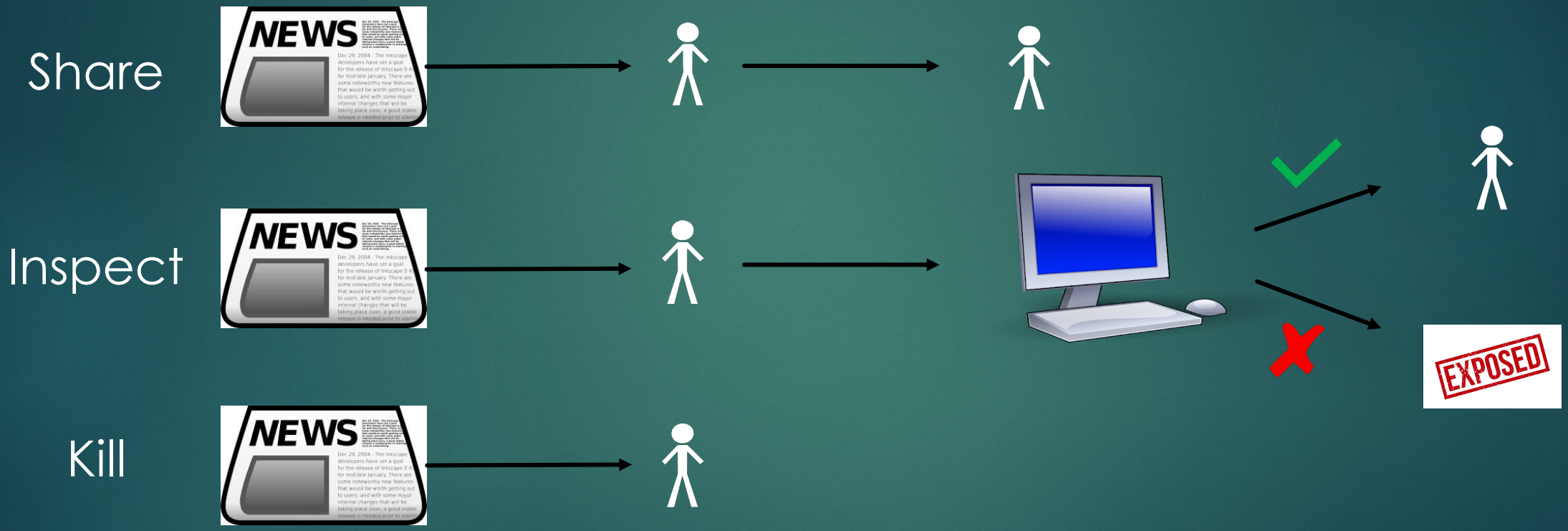
Model: News Generation



Model: News Generation



Model: Agents' Actions

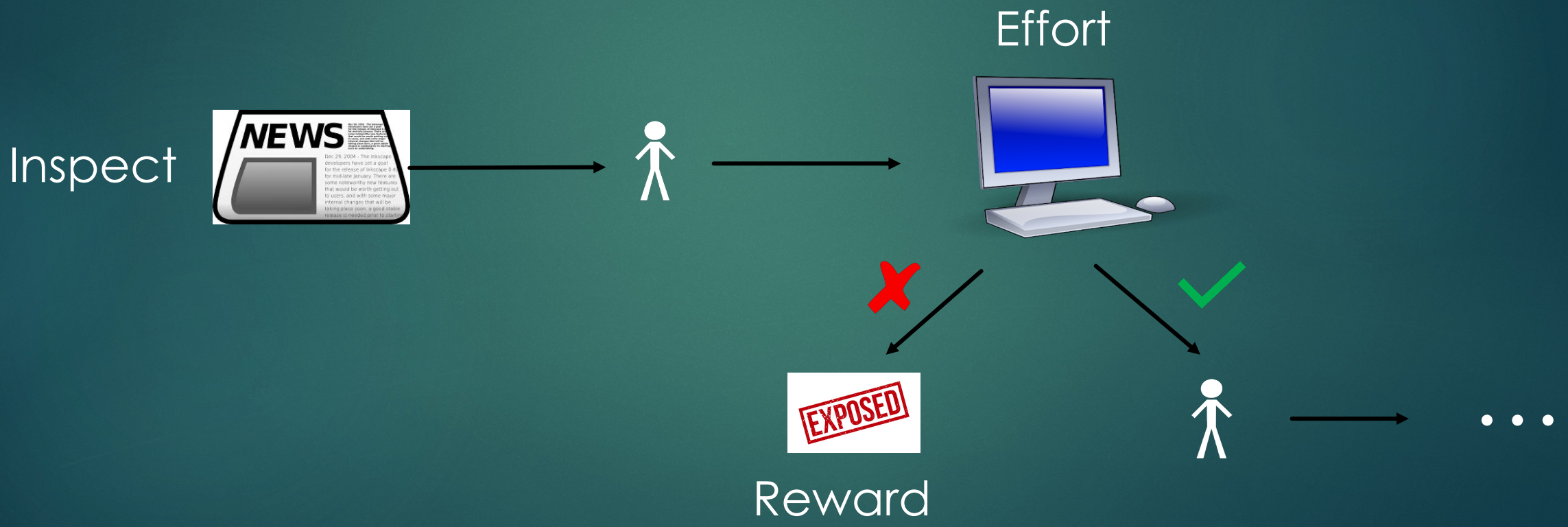


Model: Kill Payoff

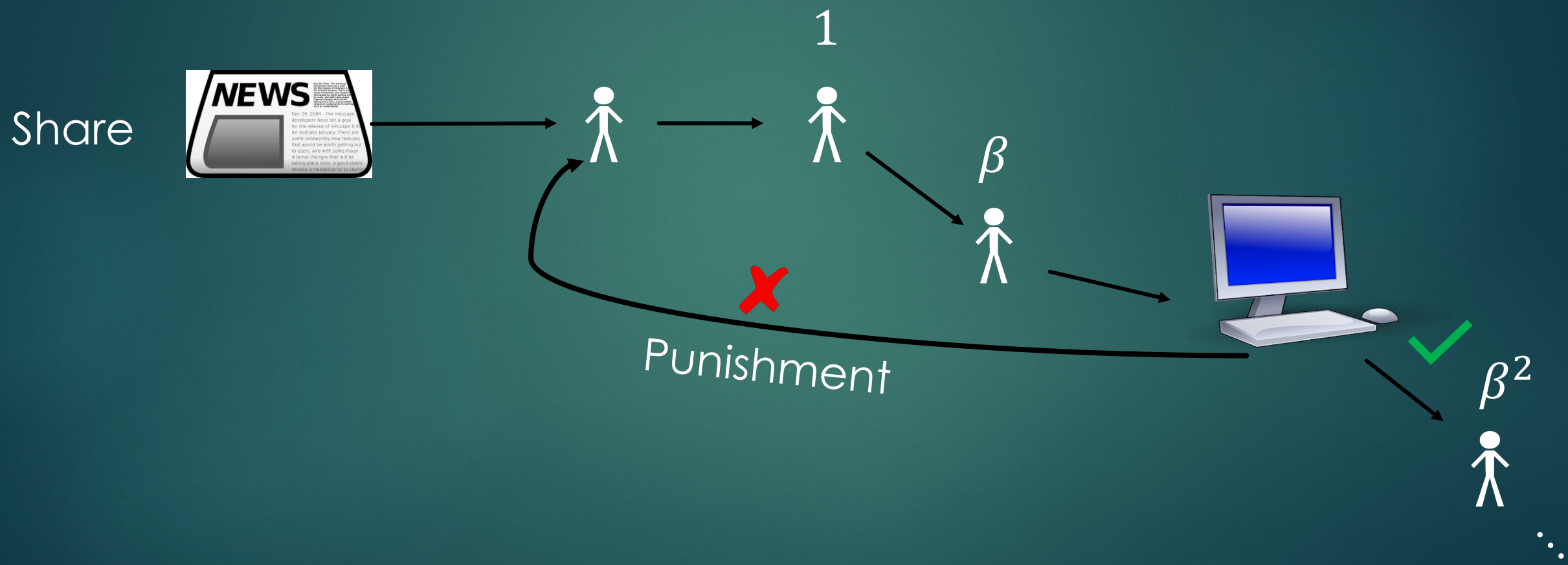
Kill

0

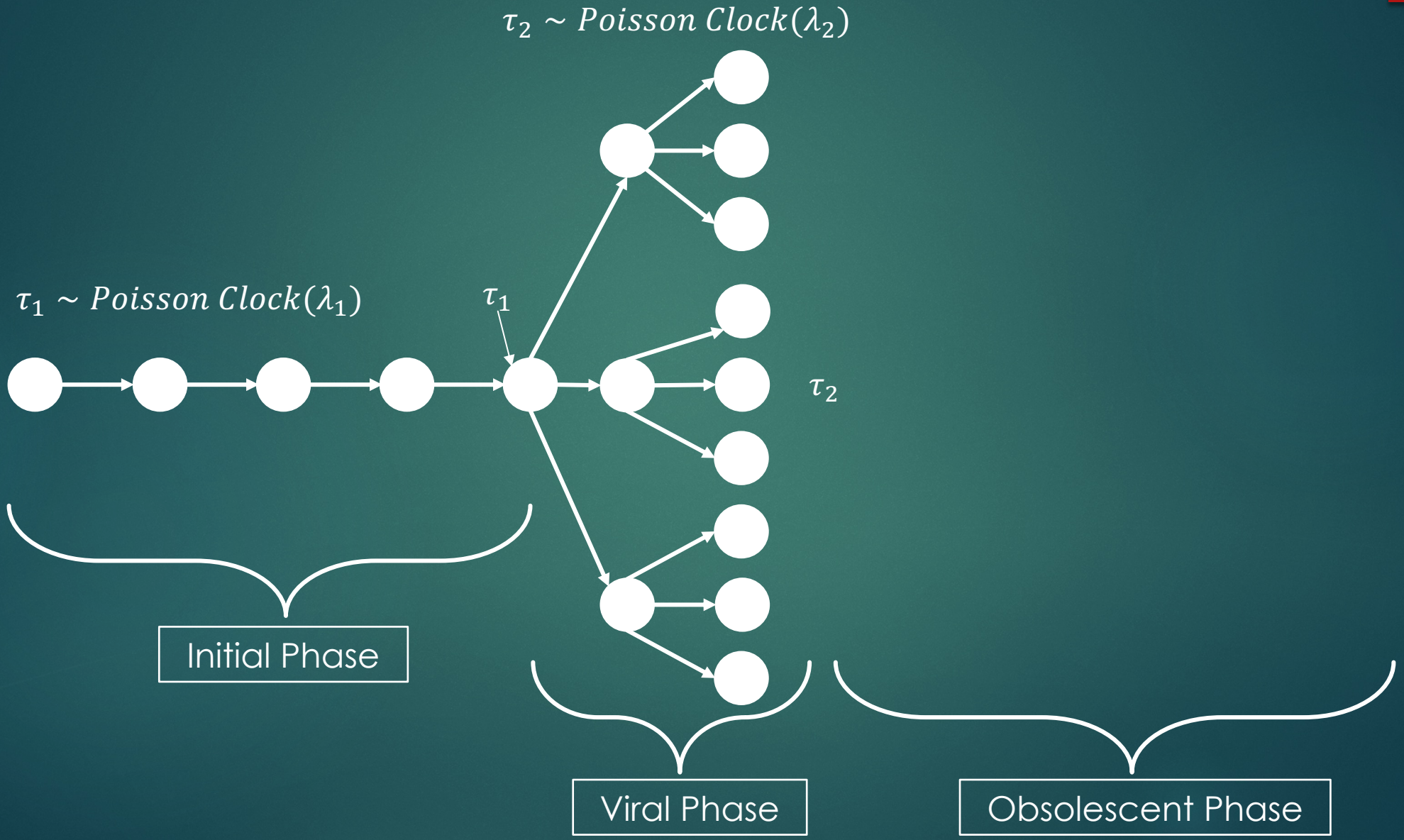
Model: Inspect Payoff



Model: Share Payoff



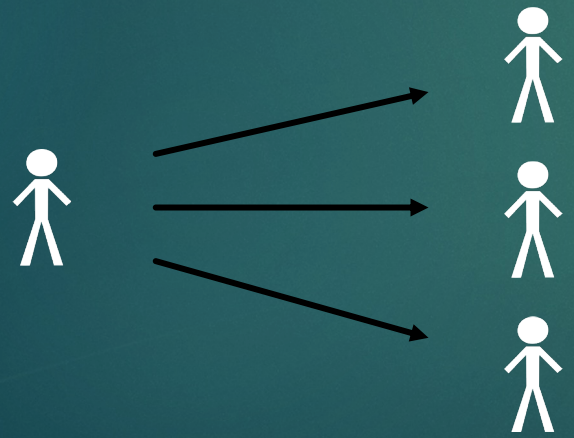
Model: Lifetime of the Article



Initial Phase

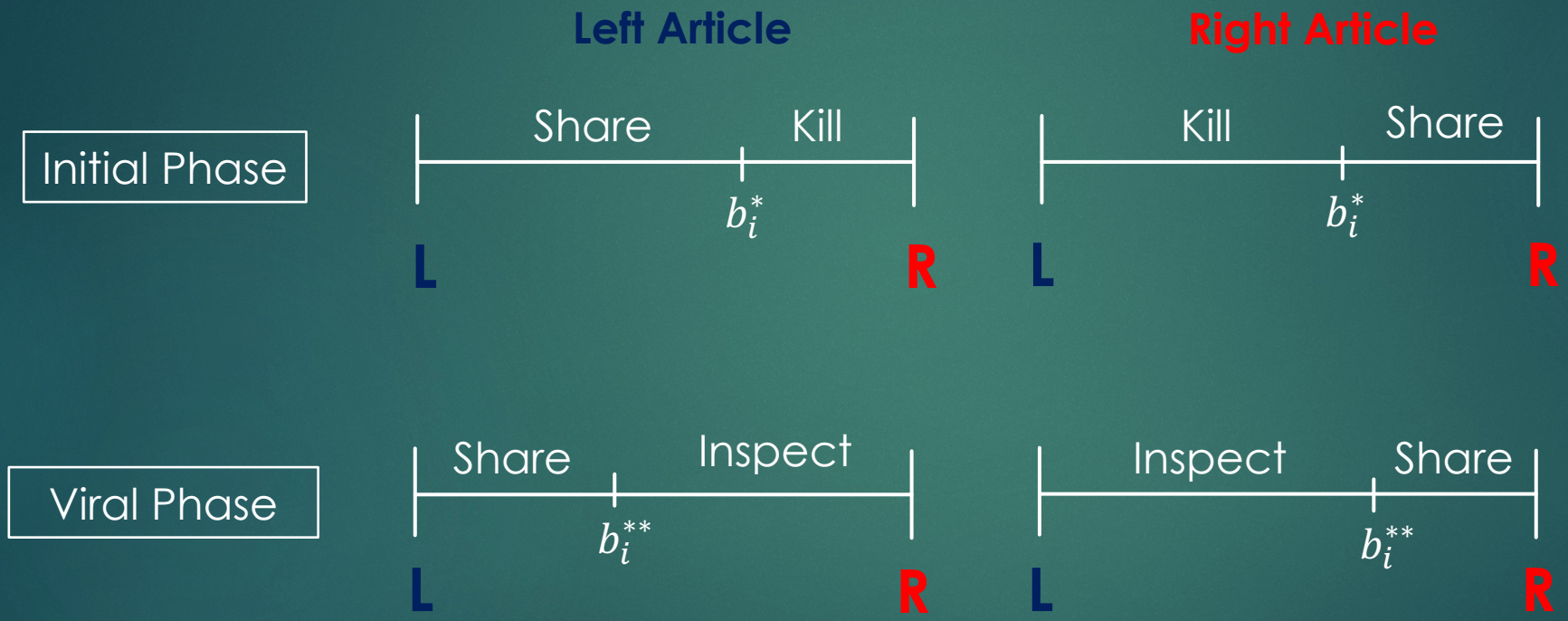
Kill ? Share

Viral Phase



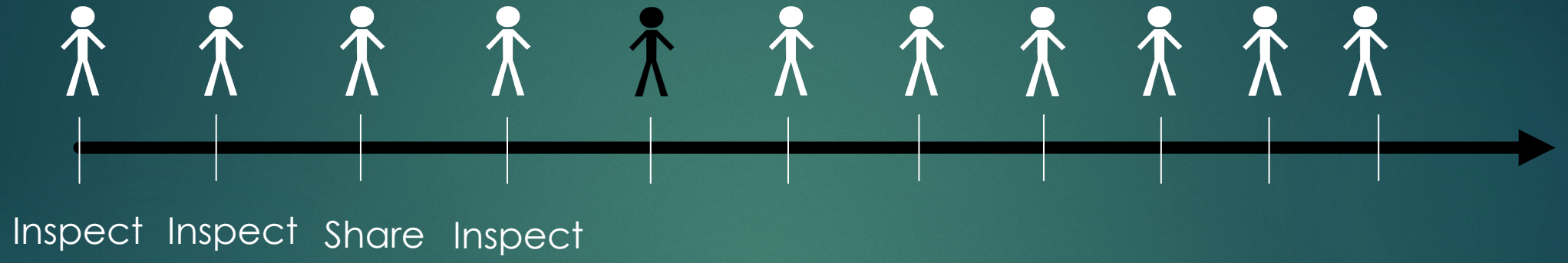
Inspect ? Share

Equilibrium: Cutoffs

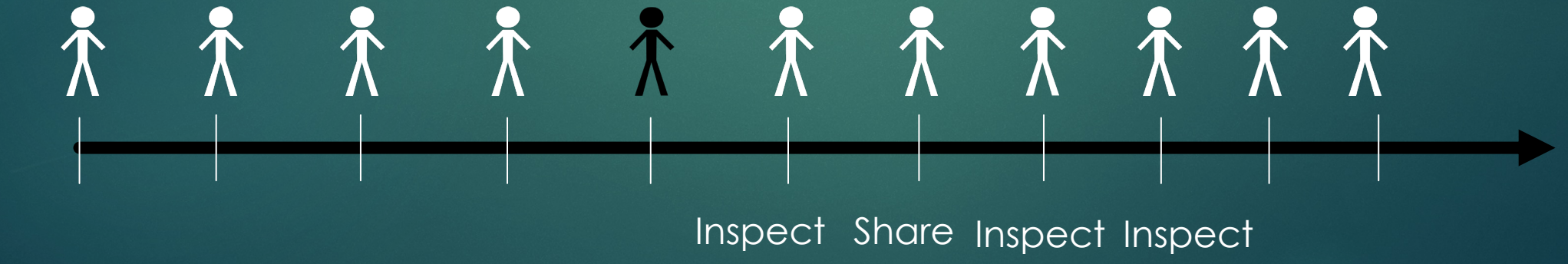


Equilibrium: Strategic Forces

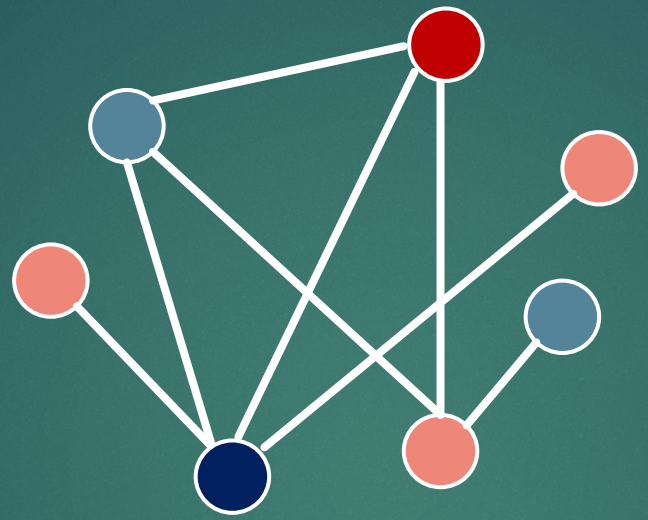
Strategic Substitutes



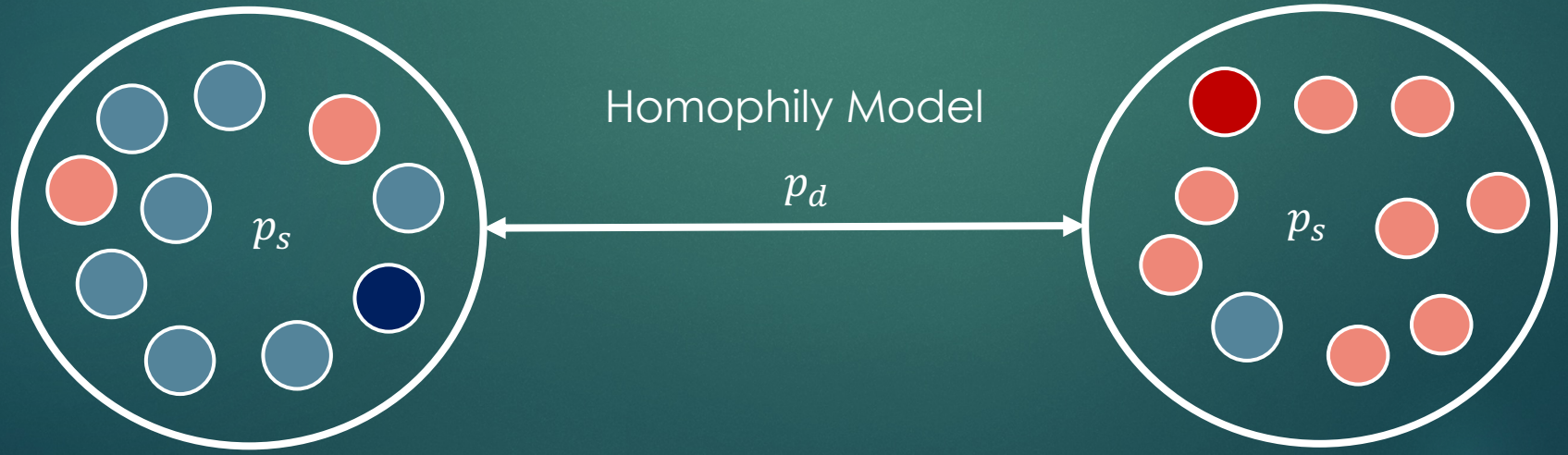
Strategic Complements



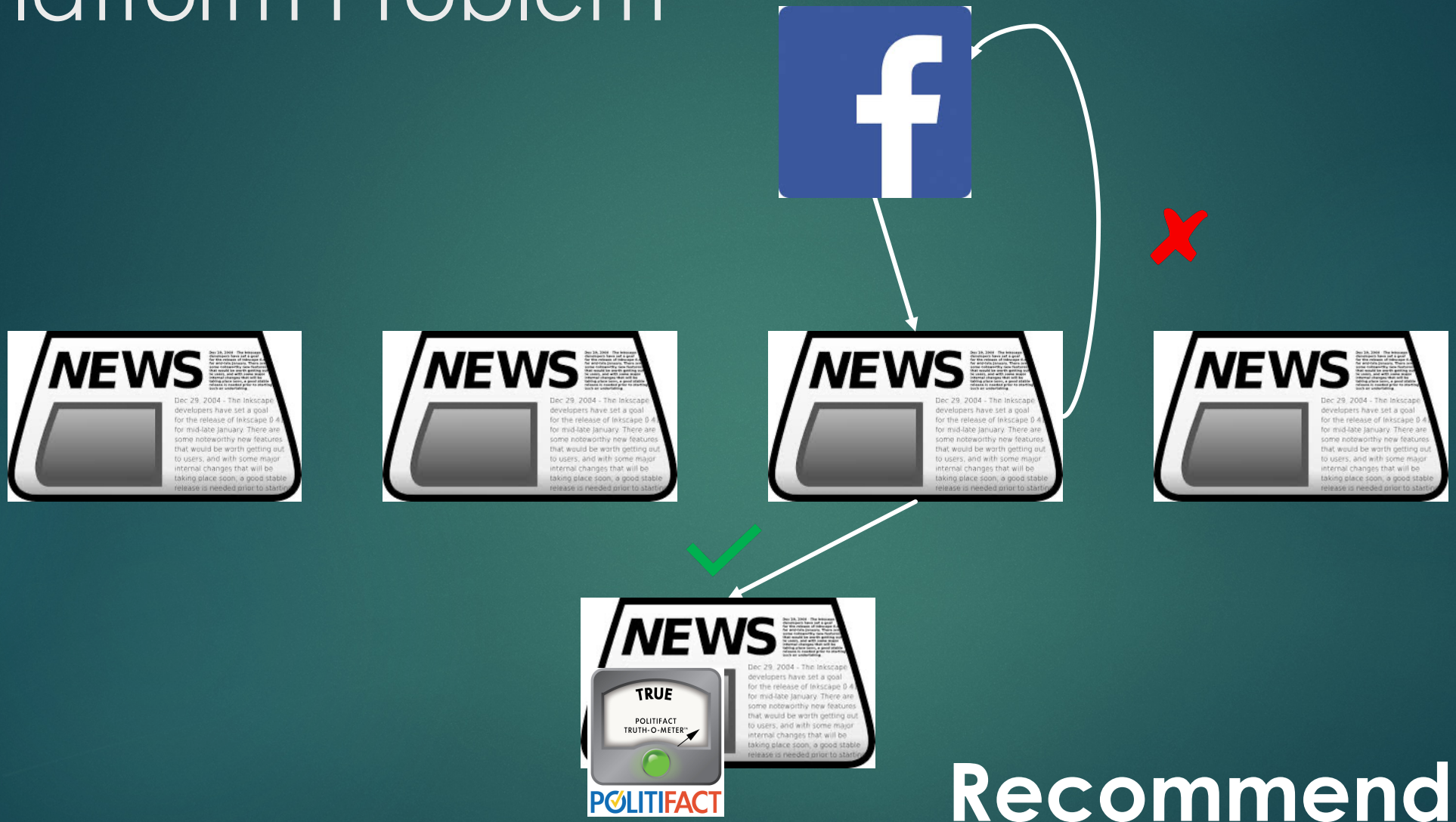
Homophily is Bad for Misinformation



Uniform Connections

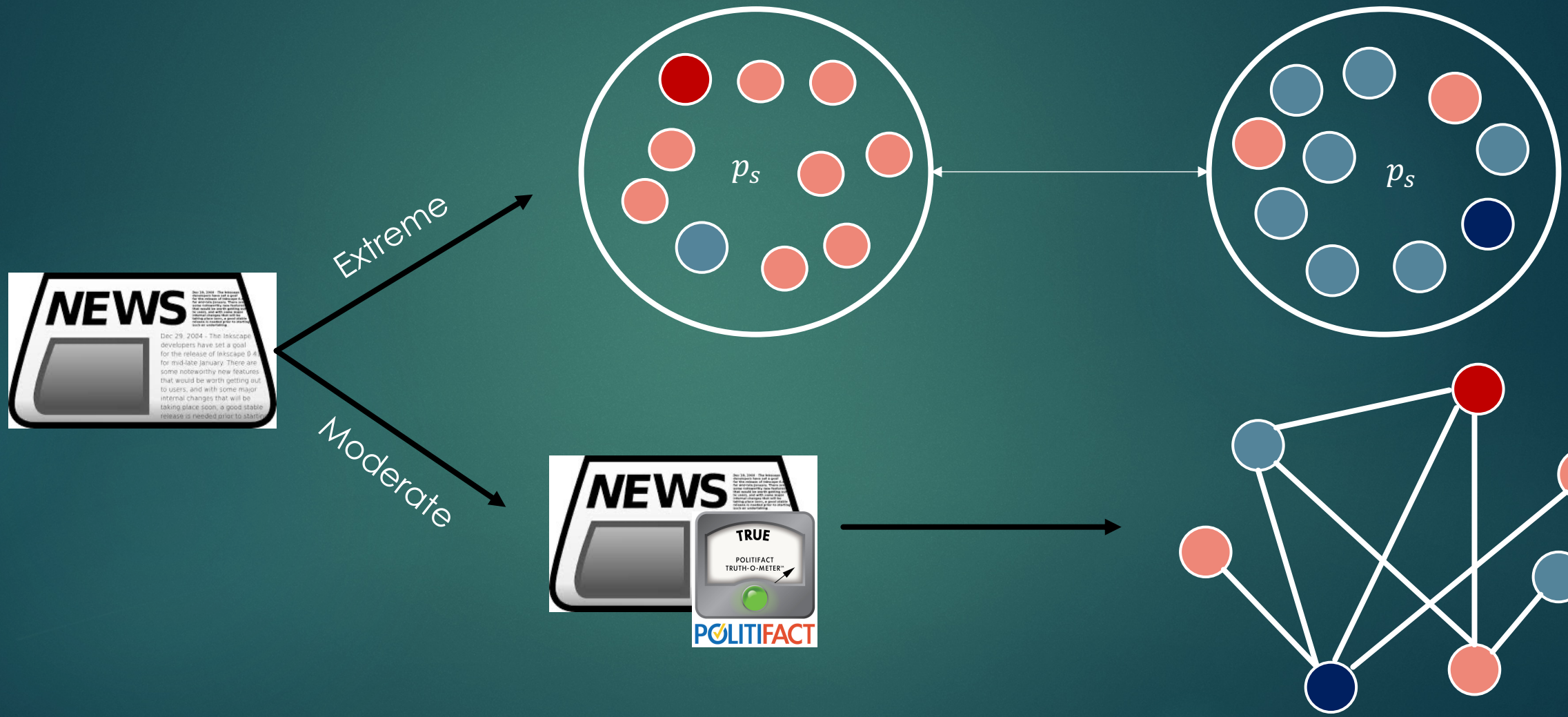


Platform Problem

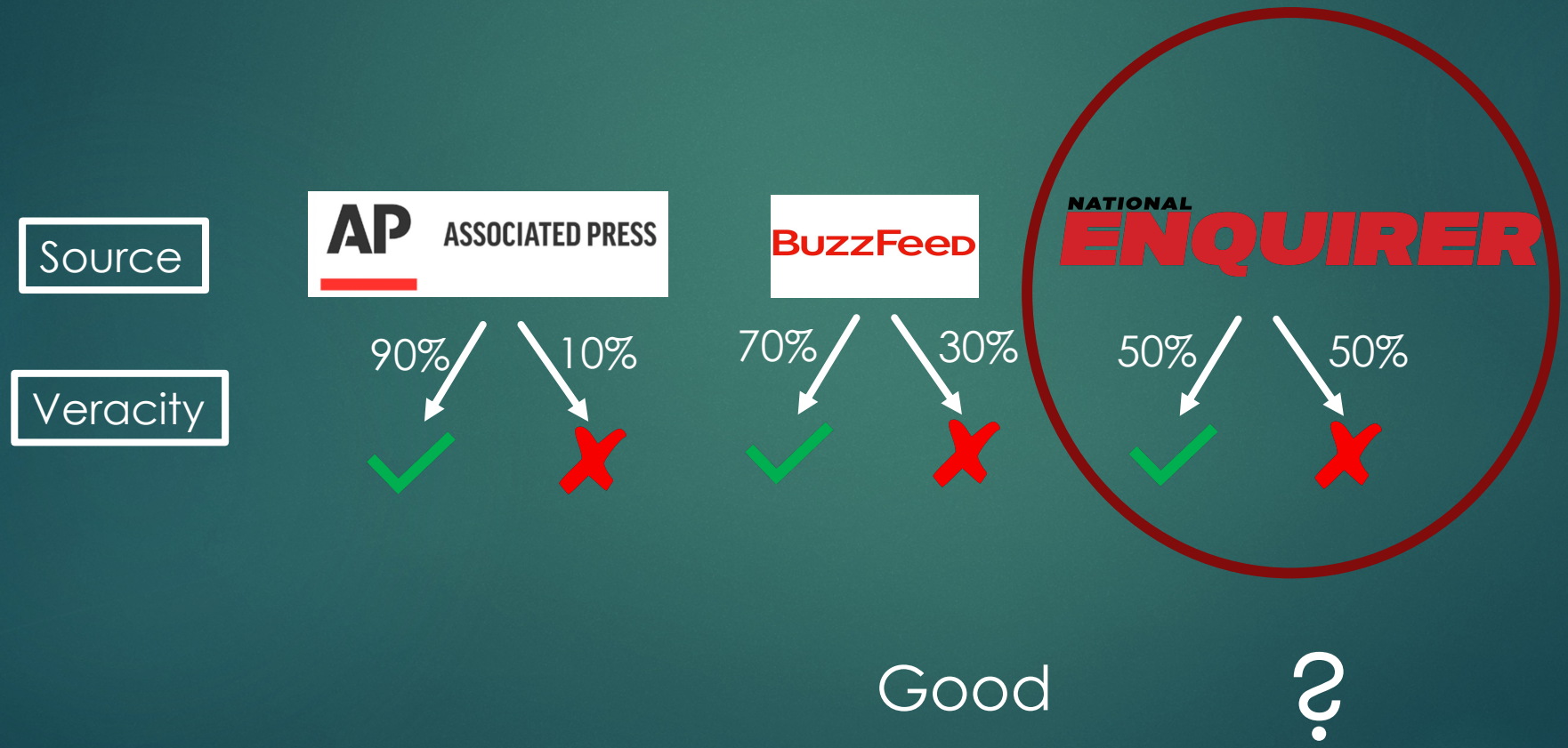


Recommendation: P

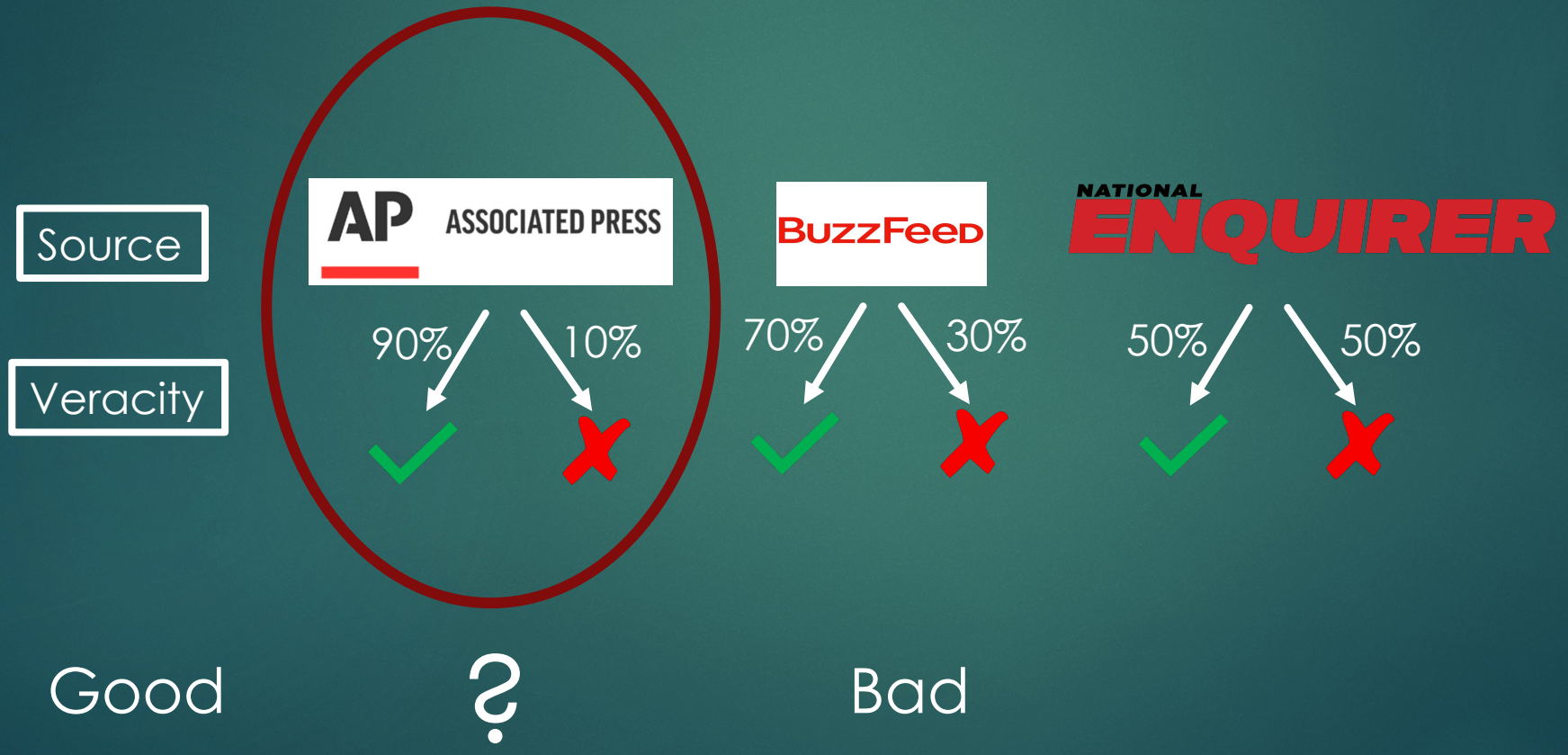
Filter Bubble Algorithm is Optimal



Combating Misinformation: Provenance



Combating Misinformation: Provenance



Conclusion

- **Main tension**: the setting where content goes unchecked is exactly the setting where platforms should fact-check, but instead recommend unverified content.
- Do social media sites *have to* compromise engagement (e.g., ad revenue) to be "socially responsible"?
- Can we design "efficient" filter bubbles that allow users to have agency over their content but do not propagate misinformation?