# Demand for Slant: How Abstention Shapes Voters' Choice of News Media

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# Quote I

*"We live in a country in which many people live in information cocoons in which they only talk to members of their own party and read blogs of their own sect." David Brooks (2010)*

# Quote II

*"Our communications market is rapidly moving" toward a situation where "people restrict themselves to their own points of view—liberals watching and reading mostly or only liberals; moderates, moderates; conservatives, conservatives; Neo-Nazis, Neo-Nazis" (4-5). This limits the "unplanned, unanticipated encounters [that are] central to democracy itself" Sunstein (2001), quoted by Gentzkow and Shapiro (2011)*

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- We need to understand how biased media affects voters decision to collect and use information
  - We need a theory of demand for political news

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  - How abstention shapes voters' consumption of news

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  - Media outlets tend to serve more than one type of customer with different ideologies
    - There is more demand for media outlets that are either moderately biased or centrists
  - "Daily me" phenomena is only associated with fringe voters

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  - Baron (2006, *JPubE*), Chan and Suen (2008, *REStud*), Duggan and Martinelli (2010, *REStud*), Krasa, et. al. (2008, *JPubE*)

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  - There is less segregation than expected
  - Voters do not strictly align their ideology with the demand for slant that theory predicts
    - There is crossover: democrats reading newspapers that republicans read and vice versa
  - Fairly moderately biased media outlets are highly demanded

# Road map

- The model
- Intuition with no abstention: monotonic demand
- Introduction of abstention: cross-over
- Conclusions

# The Model

# Voters and candidates

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$$\begin{aligned} U(\mathbf{R} \mid \omega = r) &= U(\mathbf{D} \mid \omega = d) = 0 \\ U(\mathbf{D} \mid \omega = r) &= U(\mathbf{R} \mid \omega = d) = -1 \end{aligned}$$

# Voters and candidates II

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  - voter $i$ believes that the state is $r$ with probability $\theta \in [0, 1]$
- $F$ is cdf of $q_i$ and $f$ is pdf of $\theta$; common knowledge

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- Microfoundations of $G$: Suen (2004, *EJ*) and Duggan and Martinelli (2010, *REStud*)

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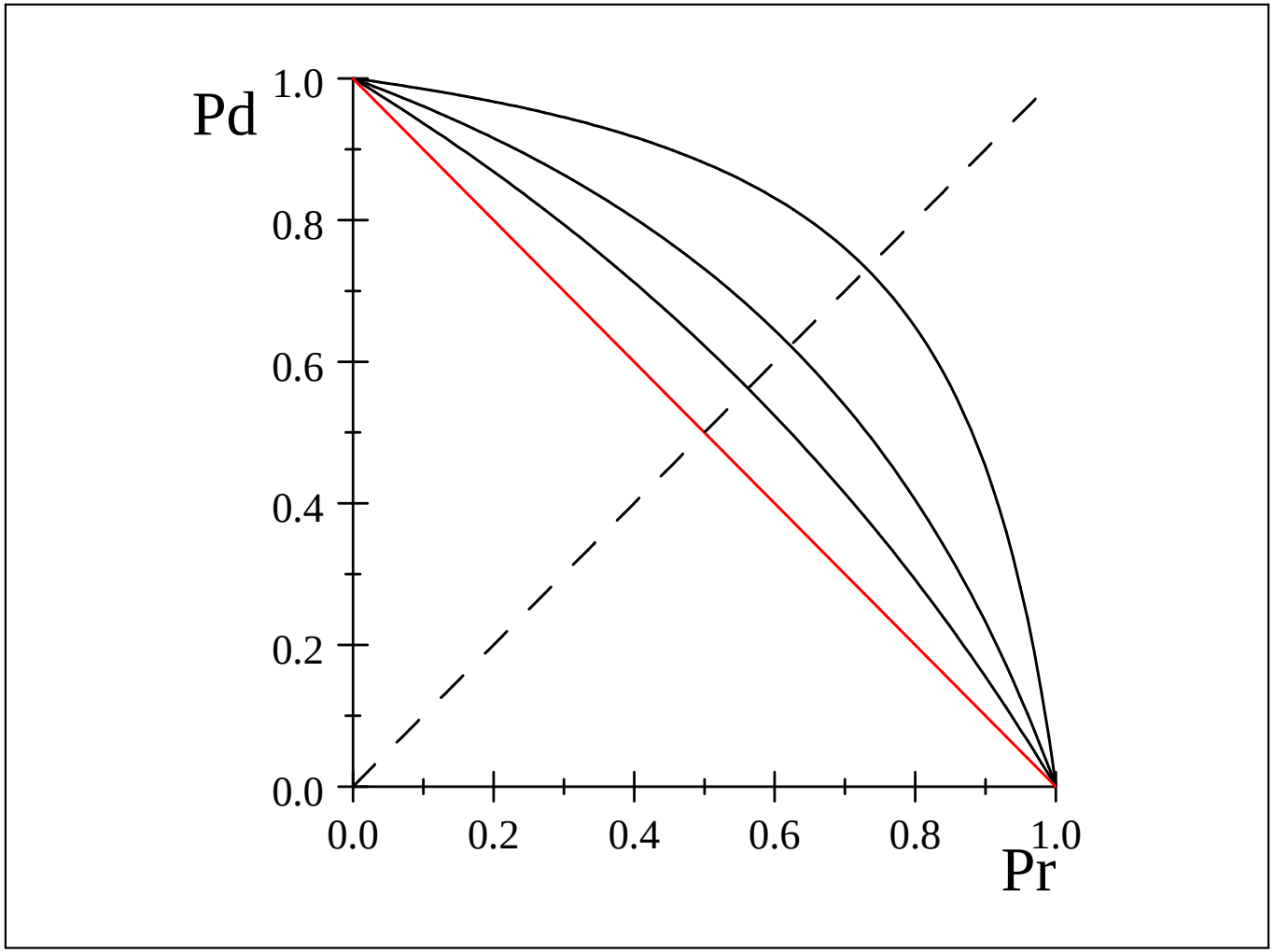
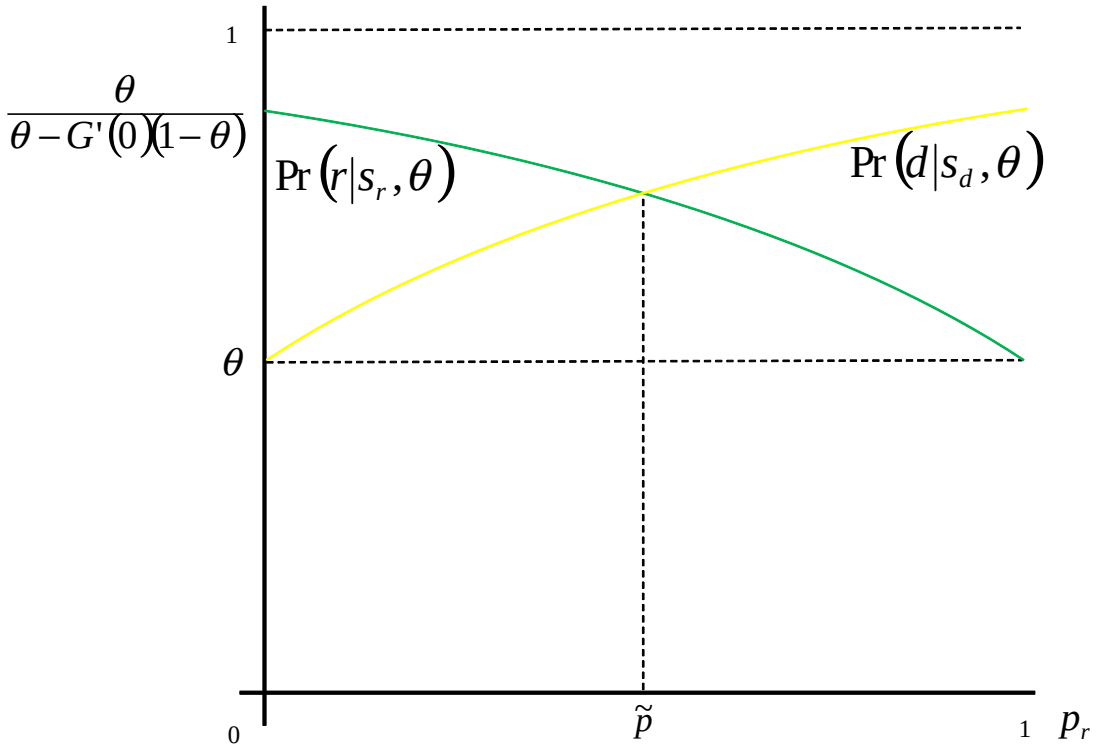
  - We assume that $\delta_{p_r,1-p_d}$ and $\delta_{p_d,1-p_r}$ are increasing

# Information technology II



# Posteriors


1
$\frac{\theta}{\theta - G'(0)(1-\theta)}$
$\Pr(r|s_r,\theta)$
$\Pr(d|s_d,\theta)$
$\theta$
0
$\tilde{p}$
1
$p_r$

# Equilibrium

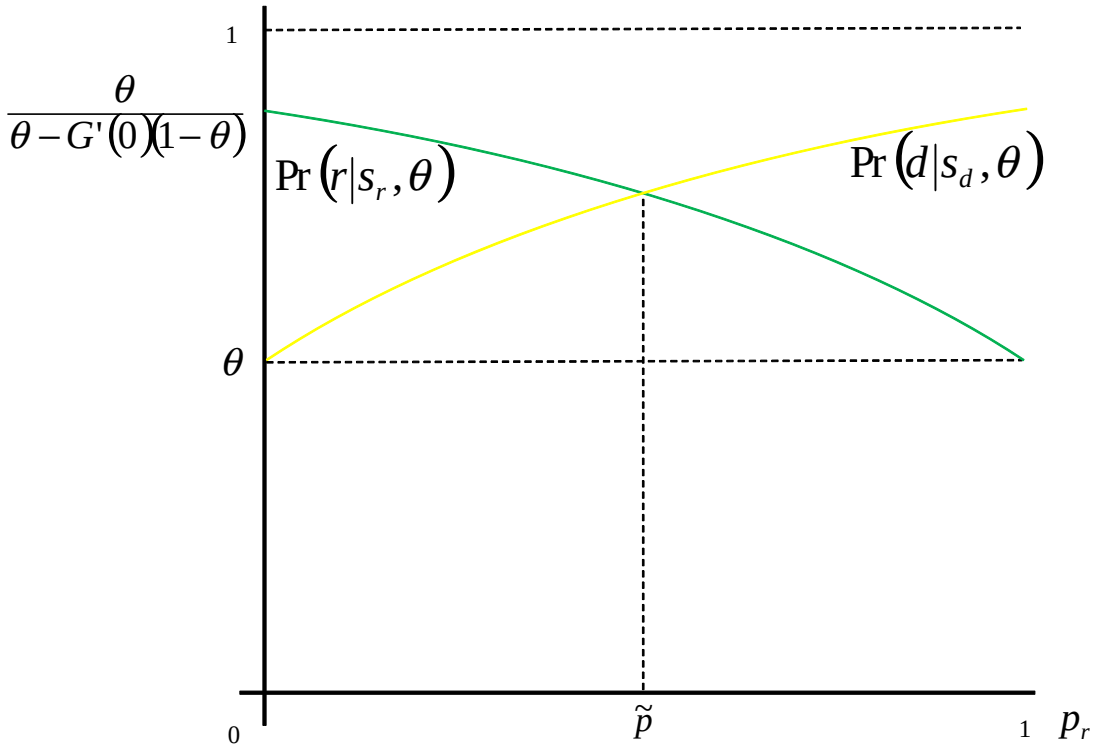
## Definition

A symmetric Bayesian equilibrium for the voting game is a strategy $\left(p_r^*(\theta), \sigma^*(\theta, S)\right)$ such that: **1)** all voters $i$ use this strategy, and **2)** there is no other feasible strategy, $\sigma^i(\theta, S)$ and $p_r^i$, such that for some $\theta$

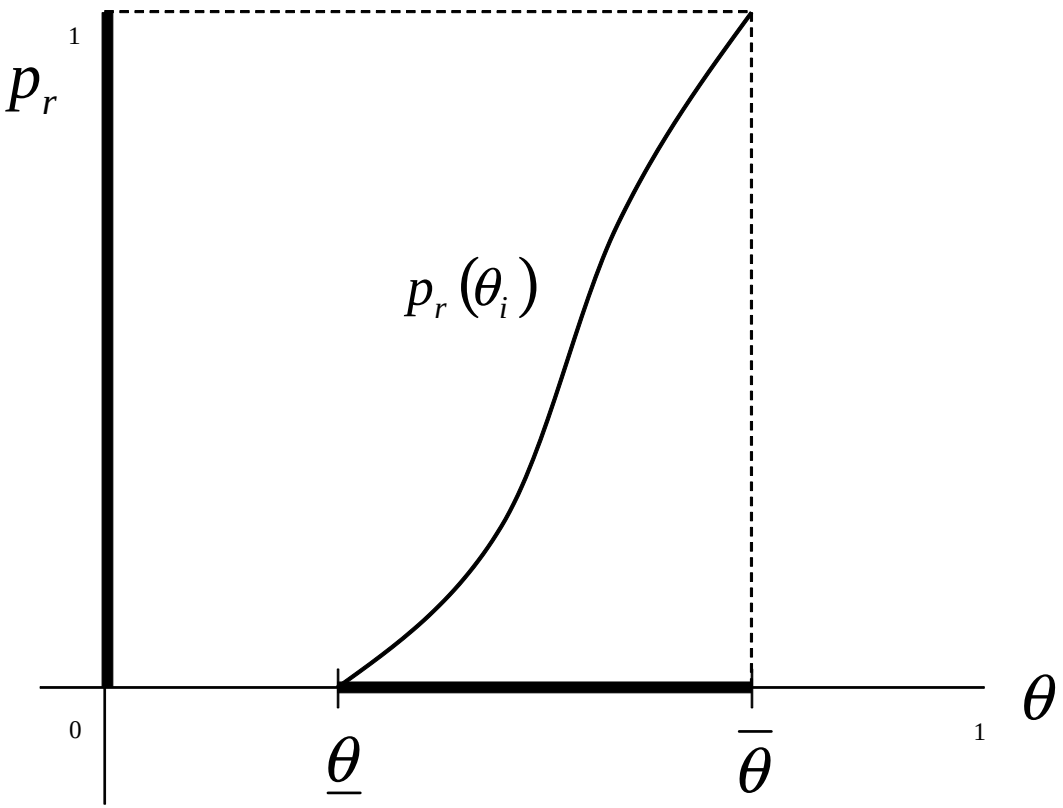
$$\mathcal{U}^i\left(p_r^i, \sigma^i(\theta, S) \mid \theta\right) > \mathcal{U}^i\left(p_r^*(\theta), \sigma^*(\theta, S) \mid \theta\right) \tag{1}$$

# Demand for Slant: No abstention

# Limits of demand



# Demand for slant



# Demand for Slant: Mandatory Voting

## Proposition (Suen (2004), Oliveros and Várdy (2011))

*If voting is mandatory demand for slant is monotonic in ideology and only relatively centrist media outlets provide information that is used to decide to vote.*
*Society is fully segregated in terms of information acquisition: there is a one to one mapping between the ideology of the voter and the slant of the media outlet.*

# Demand for Slant: Abstention

# Symmetry

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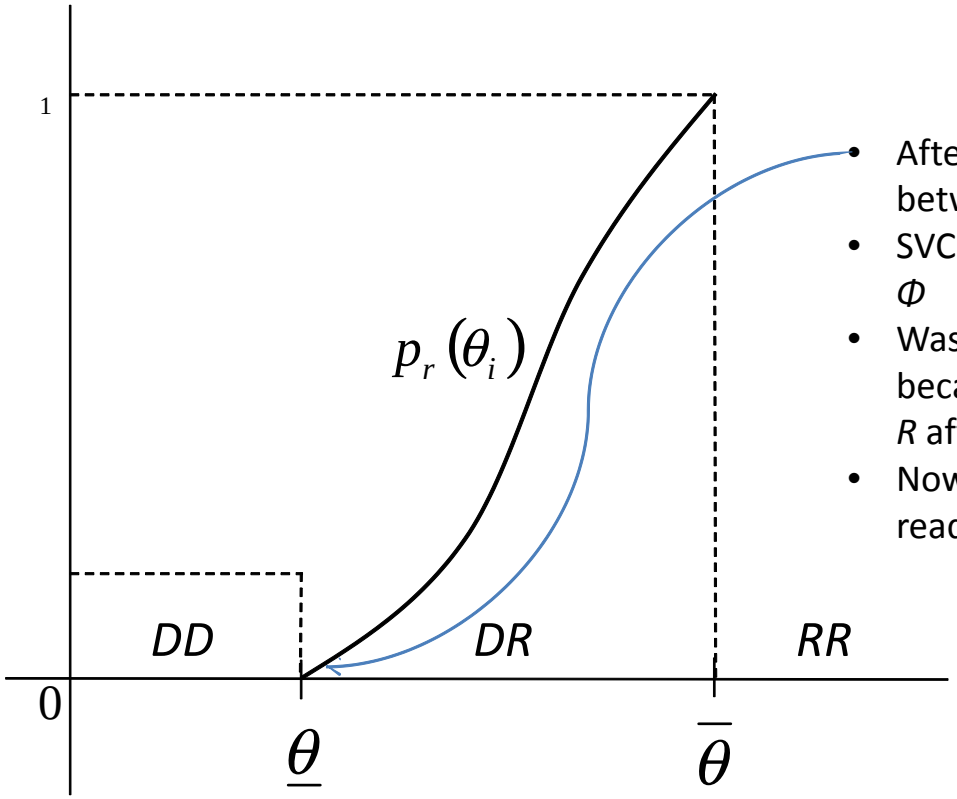
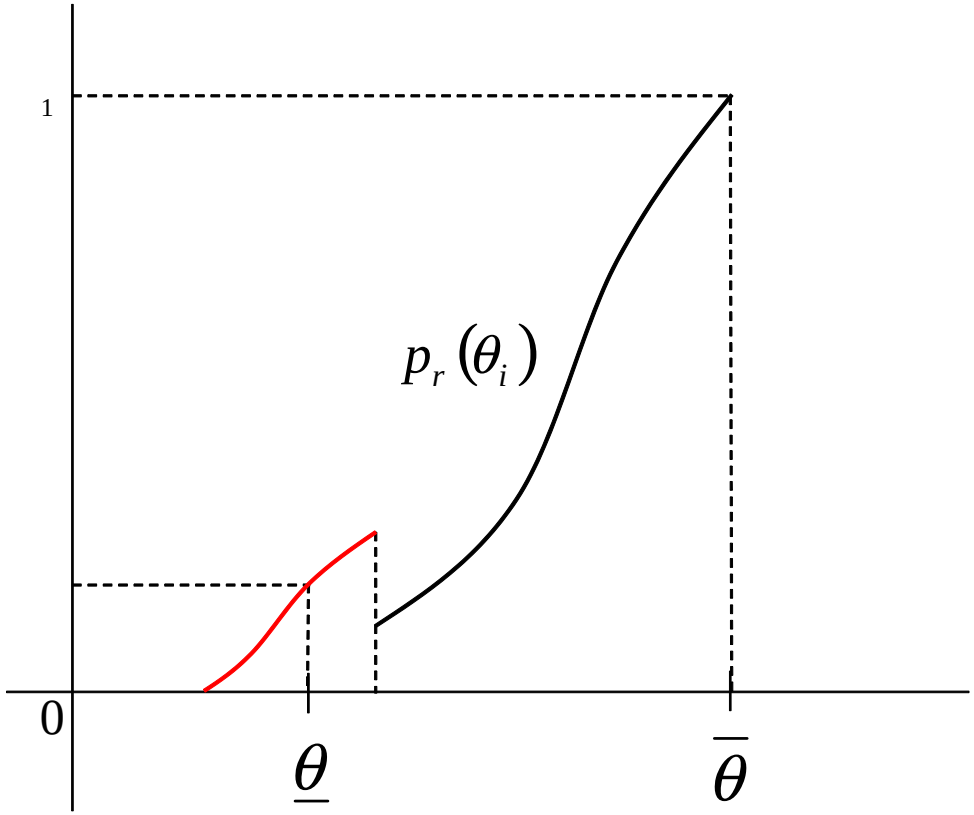
- The information technology is symmetric: $G\left(G\left(p\right)\right) = p$
- Partisans are evenly distributed.

# Demand for slant: Abstention




- After $s_r$, indifferent between *R* and *D*
- SVC implies: strictly prefers $\Phi$
- Was reading fringe paper, because planned on voting *R* after $s_r$
- Now, can afford/wants to read more centrist paper!

# Demand for slant: Abstention



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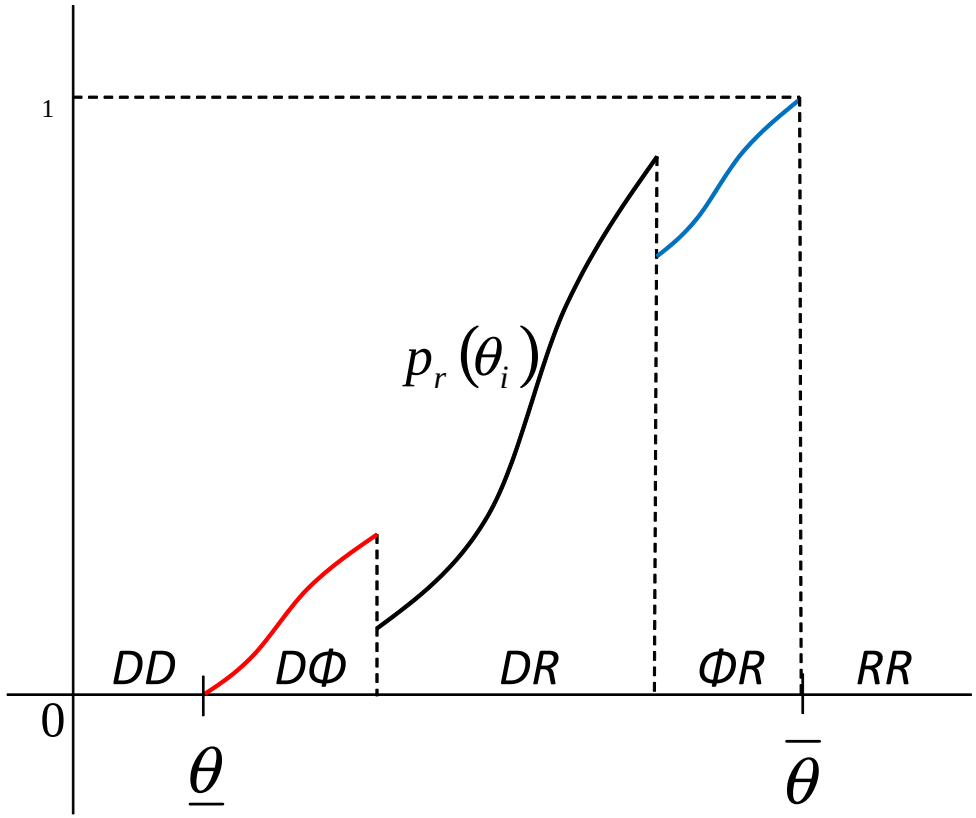

## Proposition

*The equilibrium voting strategy, $V^*$, takes on one of three forms:*

1) $DD; D\varnothing; DR; \varnothing R; RR$
2) $DD; D\varnothing; \varnothing R; RR$
3) $DD; D\varnothing; \varnothing\varnothing; \varnothing R; RR$

*Under symmetry, equilibrium is always of form 1.)*

# Demand for slant: Debrief

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  - discontinuous when informed abstention starts to be part of the optimal voting strategy
  - non monotonic in voter ideology
  - not invertible: there are voters with different ideologies demanding news from the same newspaper.
- Voters are not isolated in terms of information acquisition and segregation is smaller than under mandatory voting

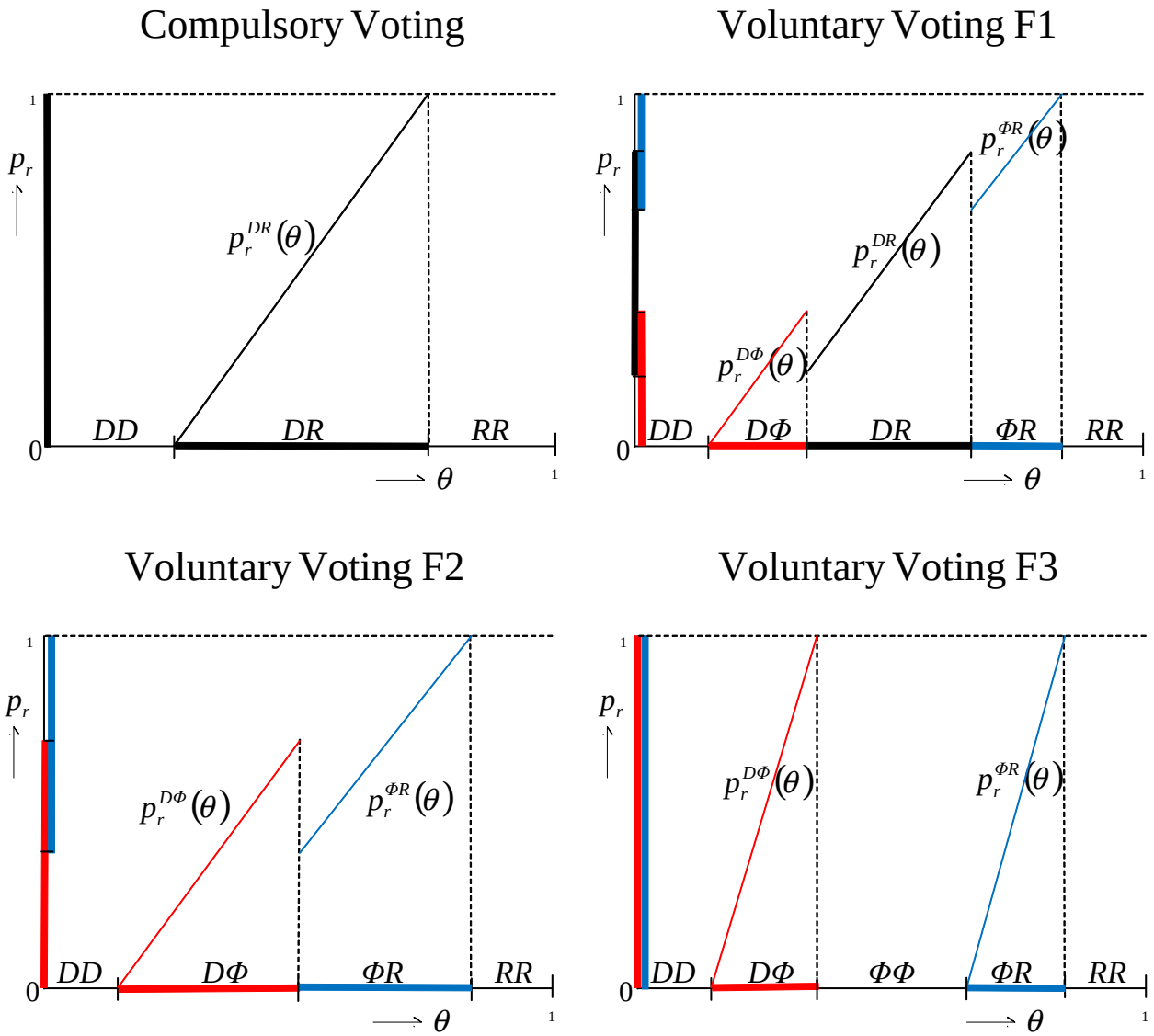


Figure: Comparison

# Demand for slant: Comments

- If $G$ is not sufficiently concave
  - Voting Sets might be disconnected
- If $G$ does not cover the whole spectrum $[0, 1]$
  - If $G(p) + p = 1$ for $p \in \{\underline{p}, \overline{p}\}$ then same results (some media outlets are not active)
  - If $G(p) + p \neq 1$ for $p \in \{\underline{p}, \overline{p}\}$ same as before but some extreme media outlets might serve a mass of types
- If $G'(0) = 0$ and $G'(1) = -\infty$ then $DD$, $RR$ and $\emptyset\emptyset$ are not played

# Conclusions

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- Applying our theoretical knowledge of demand for biased news leads to the conclusions that voters demand news that are biased in the same direction of their ideology (monotonic)
  - We do not see such segregation in the market for political news
  - We see voters with different ideologies demanding news from the same media outlet when theory says they should not
  - Voters demand news from fairly centrists media outlets

# The basic observation

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- Voting is significantly different than the typical decision theoretic problem:
  - Instead of a two actions - two outcomes problem, abstention makes voting a three actions - two outcomes problem
  - Abstention implies a very different use of information by switching how much the voter cares for the certainty conveyed by each signal

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  - This implies that the same media outlets will be serving many different ideologies
  - Less segregation in the market for news
  - Relatively centrists media outlets have more customers than extremely biased media outlets but this does not necessarily imply that centrists media outlets actually receive the highest demand

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    - The problem is that the measure(s) of polarization 1) before information, 2) after information but before voting, and 3) after information and after voting, are different.
- Abstention also encourages more information acquisition but
  - The comparison with mandatory voting is not evident since there are voters that decide not to use the information and abstain.

# Thanks

Enriqueta, Andrea and Tom
for a wonderful time and a great workshop

# Existence and Characterization

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$$\Pr(\omega \mid piv, s, \sigma^*) = \frac{\Pr(piv \mid \sigma^*, \omega) \Pr(s \mid \omega) \Pr(\omega)}{\Pr(piv, s, \sigma^*)}$$

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  - Since what matters to make a voting decision is the relative likelihood of these events we care about

$$\frac{\Pr(\omega \mid piv, s, \sigma^*)}{\Pr(\omega' \mid piv, s, \sigma^*)} = \frac{\Pr(piv \mid \sigma^*, \omega)}{\Pr(piv \mid \sigma^*, \omega')} \times \frac{\Pr(\omega)}{\Pr(\omega')} \times \frac{\Pr(s \mid \omega)}{\Pr(s \mid \omega')}$$

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  - This leads to behavior

$$\begin{aligned} p\left(\sigma\right) &= p\left(piv_\omega, piv_{\omega'}, q_i\right) \\ BR\left(\sigma\right) &= \widehat{BR}\left(\left\{piv_\omega, piv_{\omega'}\right\}\right) \end{aligned}$$

# Existence: how it works

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- Given the behavior (best response) we get the pivotal probabilities for each state $\omega$

$$\Pr\left(piv \mid \widehat{BR}\left(\left\{piv_\omega, piv_{\omega'}\right\}\right), \omega\right)$$

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$$\sigma^* = \widehat{BR}\left(\{piv^*_\omega, piv^*_{\omega.}\}\right)$$

where the pivotal probabilities are given by

$$\begin{aligned} piv^*_\omega &= \Pr\left(piv \mid \widehat{BR}\left(\{piv^*_\omega, piv^*_{\omega.}\}\right), \omega\right) \\ piv^*_{\omega'} &= \Pr\left(piv \mid \widehat{BR}\left(\{piv^*_\omega, piv^*_{\omega.}\}\right), \omega'\right) \end{aligned}$$

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- We assume that voters use the information efficiently ex post in the sense that select who to support in a Bayesian way.
  - They end up demanding information that is not used to decide who to support

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- Then the expected utility is given by:

$$\begin{aligned} \widehat{EU}(v_d v_r, p_r \mid \theta_r) &= \beta \times C(s_r, s_d; \theta_r) \\ &\quad + (1-\beta) \times EU(v_d v_r, p_r \mid \theta_r) \end{aligned}$$

# Results

## Proposition

*If consumption value for information is separable then* $p_r^{DR}(\theta_r) \longrightarrow p_r^{D\emptyset}(\theta_r) \longrightarrow p_r^{DR}(\theta_r)$ *when* $v \longrightarrow \infty$ *almost every voter selects the most extreme media outlets*

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- Intuition

$$C(\theta_r) = (c_{s_r}(\theta_r) - c_{s_d}(\theta_d)) \overbrace{(p_r\theta_r + (1 - G(p_r))(1 - \theta_r))}^{\text{extreme}} + c_{s_d}(\theta_d)$$