

Triggering extremism: political consequences of profit-seeking media

Siddhartha Bandyopadhyay (U. of Birmingham)
Kalyan Chatterjee (Penn State U.)
Jaideep Roy (Deakin U.)

Seminar at
National Taiwan University
March 2017

Extremism and its forms

Extremism and its forms

- ▶ Bias against popular ideology (Pluralistic Idea 'of' India)
- ▶ Policy that stands to hurt the common (median) man (demonetisation, withdrawal of subsidies)
- ▶ Unethical or immoral promises (punish (wo)men for)
- ▶ Excessively risky solutions to regional problems (war mongering)
- ▶ Intolerance towards minorities (economic, race, religion, sexual orientation)
- ▶

Extremism and its forms

- ▶ Bias against popular ideology (Pluralistic Idea 'of' India)
- ▶ Policy that stands to hurt the common (median) man (demonetisation, withdrawal of subsidies)
- ▶ Unethical or immoral promises (punish (wo)men for)
- ▶ Excessively risky solutions to regional problems (war mongering)
- ▶ Intolerance towards minorities (economic, race, religion, sexual orientation)
- ▶
- ▶ In this paper: extremism = electoral promises, comments, opinions and threats that generate beliefs on the policy space not liked by the swing voter

Extremism and elections

Observed platform extremism in elections is often attributed to

- ▶ strong party ideology
- ▶ polarised electorate or voting rules
- ▶ character of leadership under aggregate uncertainty
- ▶ volatility in public mood
- ▶ pandering to ideological media to attract favourable endorsements

Extremism and elections

Observed platform extremism in elections is often attributed to

- ▶ strong party ideology
- ▶ polarised electorate or voting rules
- ▶ character of leadership under aggregate uncertainty
- ▶ volatility in public mood
- ▶ pandering to ideological media to attract favourable endorsements
- ▶ While these features of a modern democracy explain extremism in their own right space, advances of capitalism and consequent emergence of market power in the modern media industry can exacerbate the problem

Extremism and elections

Observed platform extremism in elections is often attributed to

- ▶ strong party ideology
- ▶ polarised electorate or voting rules
- ▶ character of leadership under aggregate uncertainty
- ▶ volatility in public mood
- ▶ pandering to ideological media to attract favourable endorsements
- ▶ While these features of a modern democracy explain extremism in their own right space, advances of capitalism and consequent emergence of market power in the modern media industry can exacerbate the problem
- ▶ market segmentation via media competition

Extremism and elections

Observed platform extremism in elections is often attributed to

- ▶ strong party ideology
- ▶ polarised electorate or voting rules
- ▶ character of leadership under aggregate uncertainty
- ▶ volatility in public mood
- ▶ pandering to ideological media to attract favourable endorsements
- ▶ While these features of a modern democracy explain extremism in their own right space, advances of capitalism and consequent emergence of market power in the modern media industry can exacerbate the problem
- ▶ market segmentation via media competition
- ▶ We propose a political-challenger model with an **unbiased, dominant, profit-seeking** media and **unified swing** electorate to obtain platform extremism

Motivation and Questions

A possible mechanism

- ▶ Extreme positions, especially from a politician whose **valence/governance-quality/social-identity** is not well known (typically challengers), are prone to attract 'attention'

Motivation and Questions

A possible mechanism

- ▶ Extreme positions, especially from a politician whose **valence/governance-quality/social-identity** is not well known (typically challengers), are prone to attract 'attention'
- ▶ Can this induce profit-maximising media to invest more in covering extremist candidates anticipating larger willingness of voters to pay for news about extremists?

Motivation and Questions

A possible mechanism

- ▶ Extreme positions, especially from a politician whose **valence/governance-quality/social-identity** is not well known (typically challengers), are prone to attract 'attention'
- ▶ Can this induce profit-maximising media to invest more in covering extremist candidates anticipating larger willingness of voters to pay for news about extremists?
- ▶ Larger viewership helps strong candidates to communicate better with the electorate;

Motivation and Questions

A possible mechanism

- ▶ Extreme positions, especially from a politician whose **valence/governance-quality/social-identity** is not well known (typically challengers), are prone to attract 'attention'
- ▶ Can this induce profit-maximising media to invest more in covering extremist candidates anticipating larger willingness of voters to pay for news about extremists?
- ▶ Larger viewership helps strong candidates to communicate better with the electorate;
- ▶ So, will strong candidates strategically choose extreme positions, make unpopular statements or express controversial views and
- ▶ in fear of revelation otherwise, all candidates will tend to become extremists?

.... and although we are not journalists,

Is this consistent with what we know?

- ▶ It is, but scattered

.... and although we are not journalists,

Is this consistent with what we know?

- ▶ It is, but scattered
- ▶ Challengers (to an incumbent politician) typically do take more extreme positions (Ansolabehere et. al (2001))

.... and although we are not journalists,

Is this consistent with what we know?

- ▶ It is, but scattered
- ▶ Challengers (to an incumbent politician) typically do take more extreme positions (Ansolabehere et. al (2001))
- ▶ McCluskey and Kim (2012) examined the coverage of 208 political action groups (including the main national parties) in 118 newspapers in the United States. They conclude that “groups that expressed more polarized opinions were mentioned in larger newspapers, appeared earlier in articles, and were mentioned in more paragraphs”

.... and although we are not journalists,

Is this consistent with what we know?

- ▶ In the last parliamentary election in India, the challenger (Narendra Modi) ran on an 'extreme' platform and got about 8 times as much coverage as the incumbent party's candidate (Rahul Gandhi) and won handily

.... and although we are not journalists,

Is this consistent with what we know?

- ▶ In the last parliamentary election in India, the challenger (Narendra Modi) ran on an 'extreme' platform and got about 8 times as much coverage as the incumbent party's candidate (Rahul Gandhi) and won handily
- ▶ Thus polarising/extremist candidates may get more coverage and may as a result win if the coverage brings out favourable news
- ▶ Challengers are also likely to need more coverage if they are to defeat a reasonably established incumbent

Another view: entertainment value of extremists and Free Media Coverage

- ▶ Extremism can generate entertainment value for the voter when such candidates appear in the media
- ▶ Attract more 'free media time' and therefore high quality challengers may take extremist positions to communicate directly with the voter

Another view: entertainment value of extremists and Free Media Coverage

- ▶ Extremism can generate entertainment value for the voter when such candidates appear in the media
- ▶ Attract more 'free media time' and therefore high quality challengers may take extremist positions to communicate directly with the voter
- ▶ As long as any time spent by the candidate with the media provides the voter a chance to obtain at least some information about the candidate's quality beyond pure entertainment, the mechanism studied in this paper applies

.... entertainment value of extremists and Free Media Coverage

- ▶ This was observed resoundingly in the recent US Presidential campaign where Donald Trump has earned over USD 2 billion worth of free media, an amount “about twice the all-in price of the most expensive presidential campaigns in history” (NYT: 15/03/2016)
- ▶ The Huffington Post on 16/03/2016: “thanks to Trump’s ability to drive ratings and generate controversy, as well as his unmatched accessibility, notably by phone, TV networks have covered the candidate nonstop since he entered the race last summer. Numerous rallies and press conferences have been aired live, while [his] sexist and bigoted remarks typically result in a flurry of TV interviews.”

An alternative paradigm: unlimited information with costly acquisition

- ▶ The mechanism is not dependent on there being a profit-maximizing dominant media
- ▶ Other extreme of the information market: the internet where there is an unlimited supply of information about candidates – specifically about unknown challengers
- ▶ This information is available to anybody who is willing to spend enough time (costly) ‘surfing assimilating and understanding’ it
- ▶ High-quality challengers can take extreme positions to lure the voter into incurring the search cost

An alternative paradigm: unlimited information with costly acquisition

- ▶ The mechanism is not dependent on there being a profit-maximizing dominant media
- ▶ Other extreme of the information market: the internet where there is an unlimited supply of information about candidates – specifically about unknown challengers
- ▶ This information is available to anybody who is willing to spend enough time (costly) ‘surfing assimilating and understanding’ it
- ▶ High-quality challengers can take extreme positions to lure the voter into incurring the search cost
- ▶ Both are realistic scenarios and voters who have limited time will buy news from reliable sources while others will incur the time costs needed in processing and filtering news from the internet.

Early takeaways

- ▶ Extremism is a strategic response to receiving media attention, causing voters to 'buy' news in increasing quantities to educate themselves on the non policy or quality dimension

Early takeaways

- ▶ Extremism is a strategic response to receiving media attention, causing voters to 'buy' news in increasing quantities to educate themselves on the non policy or quality dimension
- ▶ Propensity of media to cover extreme candidates is not just driven by ideology (for or against); can simply be profits

Early takeaways

- ▶ Extremism is a strategic response to receiving media attention, causing voters to 'buy' news in increasing quantities to educate themselves on the non policy or quality dimension
- ▶ Propensity of media to cover extreme candidates is not just driven by ideology (for or against); can simply be profits
- ▶ Typically observed in an environment of political gloom; and it is then that democracy itself is necessarily informative: in equilibrium, there is information transmission not just through media investigation but via endogenous challenger platforms

Early takeaways

- ▶ Extremism is a strategic response to receiving media attention, causing voters to 'buy' news in increasing quantities to educate themselves on the non policy or quality dimension
- ▶ Propensity of media to cover extreme candidates is not just driven by ideology (for or against); can simply be profits
- ▶ Typically observed in an environment of political gloom; and it is then that democracy itself is necessarily informative: in equilibrium, there is information transmission not just through media investigation but via endogenous challenger platforms
- ▶ Voters may become more inclined to vote for extreme candidates (with higher media attention) even if media coverage remains uninformative (and it is common knowledge), despite its size

Early takeaways

- ▶ Extremism is a strategic response to receiving media attention, causing voters to 'buy' news in increasing quantities to educate themselves on the non policy or quality dimension
- ▶ Propensity of media to cover extreme candidates is not just driven by ideology (for or against); can simply be profits
- ▶ Typically observed in an environment of political gloom; and it is then that democracy itself is necessarily informative: in equilibrium, there is information transmission not just through media investigation but via endogenous challenger platforms
- ▶ Voters may become more inclined to vote for extreme candidates (with higher media attention) even if media coverage remains uninformative (and it is common knowledge), despite its size
- ▶ Extremism is selected through an intuitive refinement

Plan of the talk

- ▶ Model
- ▶ Media market equilibrium
- ▶ Electoral Platforms
- ▶ Refinement
- ▶ Empirical Questions/hypotheses

Model: Exogenous extremist alternative

Model: Exogenous extremist alternative

- ▶ Contestable policy set = $\{0, Z\}$ where 0 is the incumbent's policy (also the unified swing voter's ideal policy) and $Z > 0$ is an exogenously given extremist alternative
- ▶ The challenger either contests the election by choosing a platform from $\{0, Z\}$ or stays out

Model: Exogenous extremist alternative

- ▶ Contestable policy set = $\{0, Z\}$ where 0 is the incumbent's policy (also the unified swing voter's ideal policy) and $Z > 0$ is an exogenously given extremist alternative
- ▶ The challenger either contests the election by choosing a platform from $\{0, Z\}$ or stays out
- ▶ The quality of the challenger is private information: high (H) or low (L); γ = prior on H
- ▶ Electing a challenger H yields an additional utility of $h > 0$ to the voter (0 if challenger is L)

Model: Exogenous extremist alternative

- ▶ Contestable policy set = $\{0, Z\}$ where 0 is the incumbent's policy (also the unified swing voter's ideal policy) and $Z > 0$ is an exogenously given extremist alternative
- ▶ The challenger either contests the election by choosing a platform from $\{0, Z\}$ or stays out
- ▶ The quality of the challenger is private information: high (H) or low (L); $\gamma = \text{prior on } H$
- ▶ Electing a challenger H yields an additional utility of $h > 0$ to the voter (0 if challenger is L)
- ▶ Incumbent is a non-actor: known quality A with additional utility $0 < \alpha < h$ to the voter

Model contd..

- ▶ Voter has Euclidean preferences over policies: if the challenger with platform $y \in \{0, Z\}$ gets elected and the voter believes the challenger is of type H with probability ρ , then the voter's utility is

$$-y + \rho h$$

- ▶ Re-electing the incumbent yields a payoff of $0 + \alpha$

Model contd..

- ▶ Voter has Euclidean preferences over policies: if the challenger with platform $y \in \{0, Z\}$ gets elected and the voter believes the challenger is of type H with probability ρ , then the voter's utility is

$$-y + \rho h$$

- ▶ Re-electing the incumbent yields a payoff of $0 + \alpha$
- ▶ Entry by the challenger requires a cost of $k > 0$: If the challenger enters and wins, office rent = $1 + k$ (that is, the office rent over-compensates the cost of entry by an amount 1) while if he loses office rent = 0. Staying out yields a payoff of 0
- ▶ So the challenger strictly prefers to enter and win (earn 1) to not enter (earn 0) to enter and lose (earn $-k$).

Model contd..

- ▶ Before voting and after political entry by the challenger, the voter has the option of using a paid dominant media source to obtain more information about challenger's quality
- ▶ Profit-seeking media sets coverage size $Q \in [0, 1]$ that is perfectly observable; costs $c(Q)$ to the media
- ▶ $c(Q)$ is differentiable, strictly increasing and convex with $c'(0) = 0$ and $c'(1)$ sufficiently large
- ▶ Coverage Q reveals the true quality of the challenger with probability Q while with probability $1 - Q$ it reveals no additional information

Model contd..

- ▶ **Before voting** and **after political entry** by the challenger, the voter has the option of using a paid dominant media source to obtain more information about challenger's quality
- ▶ Profit-seeking media sets coverage size $Q \in [0, 1]$ that is perfectly observable; costs $c(Q)$ to the media
- ▶ $c(Q)$ is differentiable, strictly increasing and convex with $c'(0) = 0$ and $c'(1)$ sufficiently large
- ▶ Coverage Q reveals the true quality of the challenger with probability Q while with probability $1 - Q$ it reveals no additional information
- ▶ Upon observing Q the voter decides whether to pay an access fee $F \geq 0$ set by the media in order to follow the media coverage
- ▶ The media sets F and Q accordingly to maximise its profit

Access Fee or Adverts

Access Fee or Adverts

- ▶ Voter spends time on TV
- ▶ Voter's time yields space for adverts
- ▶ Firms pay media for advert space
- ▶ Media anticipates the above!

Yet another view

Yet another view

- ▶ Recall the voter's payoff: $-Z + \rho h$
- ▶ Z = short term policy dissent
- ▶ h = degree of ideological representation

Model contd..

Timeline: This environment yields an ‘atypical’ signalling game between the challenger and the voter with the following time structure:

- ▶ *Stage 1:* The challenger chooses a strategy denoted by σ , $\sigma : \{L, H\} \rightarrow \Delta(\{0, Z\} \cup \{out\})$ where Δ denotes the space of probability distributions over the triplet $\{0, z, out\}$;

Model contd..

Timeline: This environment yields an ‘atypical’ signalling game between the challenger and the voter with the following time structure:

- ▶ *Stage 1:* The challenger chooses a strategy denoted by σ , $\sigma : \{L, H\} \rightarrow \Delta(\{0, Z\} \cup \{out\})$ where Δ denotes the space of probability distributions over the triplet $\{0, z, out\}$;
- ▶ *Stage 2:* The media observes the challenger’s platform $y \in \{0, Z\}$ if the outcome of σ yields a contest, chooses the degree of coverage $Q(y) \in [0, 1]$ and announces the access fee F ; if σ yields “out”, the media does nothing and the game ends; otherwise,

Model contd..

Timeline: This environment yields an ‘atypical’ signalling game between the challenger and the voter with the following time structure:

- ▶ *Stage 1:* The challenger chooses a strategy denoted by σ , $\sigma : \{L, H\} \rightarrow \Delta(\{0, Z\} \cup \{out\})$ where Δ denotes the space of probability distributions over the triplet $\{0, z, out\}$;
- ▶ *Stage 2:* The media observes the challenger’s platform $y \in \{0, Z\}$ if the outcome of σ yields a contest, chooses the degree of coverage $Q(y) \in [0, 1]$ and announces the access fee F ; if σ yields “out”, the media does nothing and the game ends; otherwise,
- ▶ *Stage 3:* The voter observes the challenger’s chosen platform y , the amount of media coverage Q and the media access fee F and either votes without accessing the media coverage or pays F and uses media coverage to update information about the quality of challenger and then votes for the candidate that maximises his expected utility

Three Strategies

Definition

We say that σ_p involves **informative extremism** if a type H challenger enters the contest at Z with probability 1 while his type L counterpart randomizes between entering at Z with probability p and staying out with probability $1 - p$ with $0 \leq p < 1$

Three Strategies

Definition

We say that σ_p involves **informative extremism** if a type H challenger enters the contest at Z with probability 1 while his type L counterpart randomizes between entering at Z with probability p and staying out with probability $1 - p$ with $0 \leq p < 1$

Definition

We say that σ_p yields **pooling extremism** if each type of challenger enters at platform Z with probability 1. We denote such a strategy by σ_{babble}

Three Strategies

Definition

We say that σ_p involves **informative extremism** if a type H challenger enters the contest at Z with probability 1 while his type L counterpart randomizes between entering at Z with probability p and staying out with probability $1 - p$ with $0 \leq p < 1$

Definition

We say that σ_p yields **pooling extremism** if each type of challenger enters at platform Z with probability 1. We denote such a strategy by σ_{babble}

Definition

We say that $\sigma_{p,\text{cen}}$ yields **informative centrism** if a type H challenger enters the contest at the voter's ideal policy 0 with probability 1 while his type L counterpart randomizes between entering at 0 with probability p and staying out with probability $1 - p$ with $0 \leq p < 1$.

Interim Phase Preferences with informative extremism

- ▶ NOTE: both types cannot randomize: indifference for both require $Q = 0$; but then L enters with prob. 1.

Interim Phase Preferences with informative extremism

- ▶ NOTE: both types cannot randomize: indifference for both require $Q = 0$; but then L enters with prob. 1.
- ▶ Pick the strategy σ_p : Interim beliefs of the voter that the challenger is H is

$$\rho(Z|\sigma_p) = \frac{\gamma}{\gamma + p(1 - \gamma)} > \gamma$$

whenever $p < 1$; hence informative

- ▶ **Interim Anti-incumbency** $\alpha < \rho h - Z$
- ▶ **Interim Pro-incumbency** $\alpha > \rho h - Z$
- ▶ **Interim Indifference** $\alpha = \rho h - Z$

Value of media coverage under anti-incumbency (AI):

- ▶ No access: $U^{NA}(Z|\sigma_p| AI) = -Z + \rho(Z|\sigma_p)h$

Value of media coverage under anti-incumbency (AI):

- ▶ No access: $U^{\text{NA}}(Z|\sigma_p | \text{AI}) = -Z + \rho(Z|\sigma_p)h$
- ▶ With Access:
 - ▶ Prob. $Q\rho(Z|\sigma_p)$: type revealed = H ; vote for challenger and obtain $-Z + h$
 - ▶ Prob. $Q(1 - \rho(Z|\sigma_p))$: type revealed = L ; vote for incumbent and obtain α
 - ▶ Prob. $1 - Q$: media reveals no information; vote for challenger and obtain $-Z + \rho(Z|\sigma_p)h$

Value of media coverage under anti-incumbency (AI):

- ▶ No access: $U^{\text{NA}}(Z|\sigma_p | \text{AI}) = -Z + \rho(Z|\sigma_p)h$
- ▶ With Access:
 - ▶ Prob. $Q\rho(Z|\sigma_p)$: type revealed = H ; vote for challenger and obtain $-Z + h$
 - ▶ Prob. $Q(1 - \rho(Z|\sigma_p))$: type revealed = L ; vote for incumbent and obtain α
 - ▶ Prob. $1 - Q$: media reveals no information; vote for challenger and obtain $-Z + \rho(Z|\sigma_p)h$
 - ▶

$$U^A(Z|\sigma_p | \text{AI}) = Q\rho(Z|\sigma_p)(-Z + h) + Q(1 - \rho(Z|\sigma_p))\alpha + (1 - Q)(-Z + \rho(Z|\sigma_p)h)$$

Value of media coverage under anti-incumbency (AI):

- ▶ No access: $U^{\text{NA}}(Z|\sigma_p | \text{AI}) = -Z + \rho(Z|\sigma_p)h$
- ▶ With Access:
 - ▶ Prob. $Q\rho(Z|\sigma_p)$: type revealed = H ; vote for challenger and obtain $-Z + h$
 - ▶ Prob. $Q(1 - \rho(Z|\sigma_p))$: type revealed = L ; vote for incumbent and obtain α
 - ▶ Prob. $1 - Q$: media reveals no information; vote for challenger and obtain $-Z + \rho(Z|\sigma_p)h$
 - ▶

$$U^{\text{A}}(Z|\sigma_p | \text{AI}) = Q\rho(Z|\sigma_p)(-Z + h) + Q(1 - \rho(Z|\sigma_p))\alpha + (1 - Q)(-Z + \rho(Z|\sigma_p)h)$$

- ▶ $V(Z|\sigma_p | \text{AI}) = U^{\text{A}}(Z|\sigma_p | \text{AI}) - U^{\text{NA}}(\sigma_p | \text{AI})$
 $= Q(1 - \rho(Z|\sigma_p))(Z + \alpha)$ if $Z \leq \rho(Z|\sigma_p)h - \alpha$

Value of media coverage under anti-incumbency (AI):

- ▶ No access: $U^{\text{NA}}(Z|\sigma_p | \text{AI}) = -Z + \rho(Z|\sigma_p)h$
- ▶ With Access:
 - ▶ Prob. $Q\rho(Z|\sigma_p)$: type revealed = H ; vote for challenger and obtain $-Z + h$
 - ▶ Prob. $Q(1 - \rho(Z|\sigma_p))$: type revealed = L ; vote for incumbent and obtain α
 - ▶ Prob. $1 - Q$: media reveals no information; vote for challenger and obtain $-Z + \rho(Z|\sigma_p)h$
 - ▶

$$U^A(Z|\sigma_p | \text{AI}) = Q\rho(Z|\sigma_p)(-Z + h) + Q(1 - \rho(Z|\sigma_p))\alpha + (1 - Q)(-Z + \rho(Z|\sigma_p)h)$$

- ▶ $V(Z|\sigma_p | \text{AI}) = U^A(Z|\sigma_p | \text{AI}) - U^{\text{NA}}(\sigma_p | \text{AI})$
 $= Q(1 - \rho(Z|\sigma_p))(Z + \alpha)$ if $Z \leq \rho(Z|\sigma_p)h - \alpha$

Similarly:

$$V(Z|\sigma_p | \text{PI}) = Q\rho(Z|\sigma_p)((h - (\alpha + Z)))$$
 if $Z \geq \rho(Z|\sigma_p)h - \alpha$

Voter's Valuation for Media Coverage: $V(Z, p, Q)$

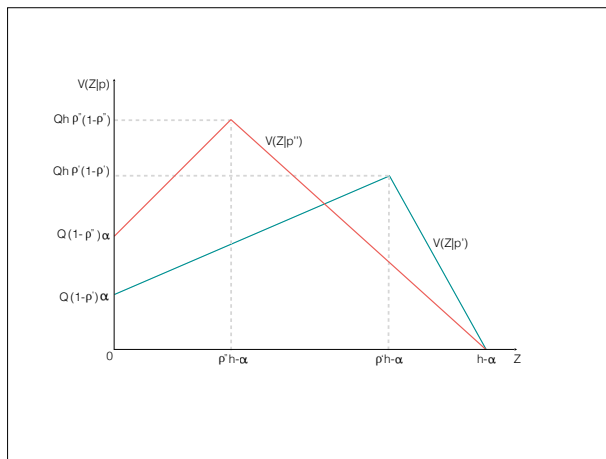


Figure: Rise in extremism reduces demand for news in pro-incumbency but increases demand in anti-incumbency; drawn for $p' < p''$

Supply Media Coverage: $\pi(Q) = V(Z, p, Q) - c(Q)$

Supply Media Coverage: $\pi(Q) = V(Z, p, Q) - c(Q)$

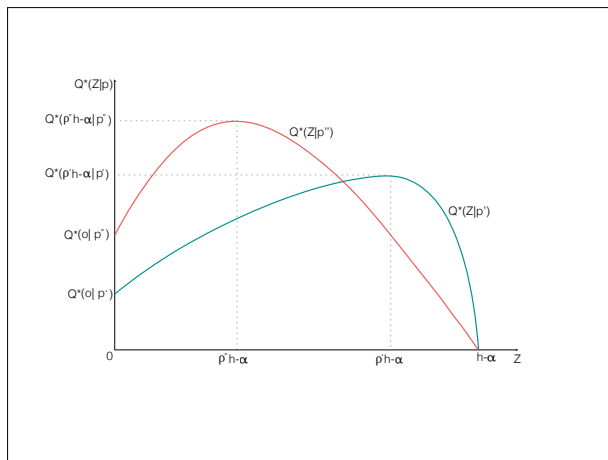


Figure: Profit-maximizing media coverage on an extremist challenger for different degrees of exogenously given extremist policies Z for two values of p , namely p' and p'' with $p' < p''$

(Perfect Bayesian) Equilibrium with Weak-Monotone Beliefs

- ▶ H enters at Z with probability 1
- ▶ p^* = prob. with which L enters at Z [with $1 - p^*$ he stays out]
- ▶ ρ^* = prob. with which voter believes challenger is H
- ▶ x^* = probability with which the voter votes for the challenger: 1 if AI, 0 if PI and there is no media information
- ▶ Q^* = Media's profit maximising coverage
- ▶ **Off-the-equilibrium-beliefs** μ_Z on $\{0, Z\}$: *If 0 is the observed platform choice of the challenger, the voter believes that the challenger is of type L with probability 1 unless the media reveals that he is of type H*

Existence and characterisation: informative extremism and anti-incumbency

- ▶ Define $\bar{Q} = \frac{1}{1+k}$ and $\bar{Z} = \frac{c'(\bar{Q})}{1-\gamma} - \alpha$. An equilibrium with WM beliefs μ_Z , informative extremism and interim anti-incumbency exists if and only if the exogenously given extremist platform $Z > \bar{Z}$. In this equilibrium, $Q^* = \bar{Q}$ and $p^* = \left(\frac{\gamma}{1-\gamma}\right) \left(\frac{c'(\bar{Q})}{(Z+\alpha)-c'(\bar{Q})}\right)$.

Existence and characterisation: informative extremism and anti-incumbency

- ▶ Define $\bar{Q} = \frac{1}{1+k}$ and $\bar{Z} = \frac{c'(\bar{Q})}{1-\gamma} - \alpha$. An equilibrium with WM beliefs μ_Z , informative extremism and interim anti-incumbency exists if and only if the exogenously given extremist platform $Z > \bar{Z}$. In this equilibrium, $Q^* = \bar{Q}$ and $p^* = \left(\frac{\gamma}{1-\gamma}\right) \left(\frac{c'(\bar{Q})}{(Z+\alpha)-c'(\bar{Q})}\right)$.
- ▶ As Z rises, p^* , the probability with which the L type challengers take the extremist platform falls, but the amount of media coverage Q^* remains fixed
- ▶ Anti-incumbency & indifference condition for the L type:

$$(1 - Q^*)1 + Q^*(-k) = 0$$

Existence and characterisation: informative extremism and interim voter indifference

- Define $\hat{Z} = h - \alpha \left(\frac{1-\gamma}{\gamma} \right)$ and $\hat{Q} = c'^{-1} \left((h - (\alpha + Z)) \left(\frac{Z+\alpha}{h} \right) \right)$. An equilibrium with WM beliefs μ_Z , informative extremism and interim voter indifference exists if and only if $Z > \hat{Z}$ and $\hat{Q} \leq \frac{1}{1+k}$. In this equilibrium, $Q^* = \hat{Q}$, $x^* = \frac{k}{(1-\hat{Q})(1+k)}$ and $p^* = \left(\frac{\gamma}{1-\gamma} \right) \left(\frac{h-Z}{\alpha} \right)$.

Existence and characterisation: informative extremism and interim voter indifference

- ▶ Define $\hat{Z} = h - \alpha \left(\frac{1-\gamma}{\gamma} \right)$ and $\hat{Q} = c'^{-1} \left(((h - (\alpha + Z)) \left(\frac{Z+\alpha}{h} \right)) \right)$. An equilibrium with WM beliefs μ_Z , informative extremism and interim voter indifference exists if and only if $Z > \hat{Z}$ and $\hat{Q} \leq \frac{1}{1+k}$. In this equilibrium, $Q^* = \hat{Q}$, $x^* = \frac{k}{(1-\hat{Q})(1+k)}$ and $p^* = \left(\frac{\gamma}{1-\gamma} \right) \left(\frac{h-Z}{\alpha} \right)$.

- ▶
$$c'(Q^*) = ((h - (\alpha + Z)) \left(\frac{Z + \alpha}{h} \right))$$

The RHS rising in Z if $Z < \frac{h}{2} - \alpha$ and falling thereafter. Since $c'' > 0$, it follows that Q^* is rising in Z if $Z < \frac{h}{2} - \alpha$ and falling thereafter as well. As a result, x^* is convex in Z .

(Perfect Bayesian) Equilibrium set with WM beliefs contd..

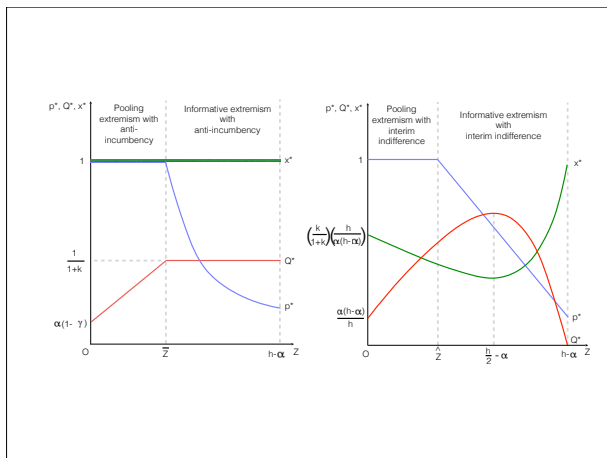


Figure: **!Comparative statics!** on exogenously given extremist platform Z
 $(c(Q) = Q^2/2)$

Remarks

- ▶ Equilibrium with Pooling extremism and Voter indifference is non-generic in the parameter space
- ▶ Multiplicity of perfect Bayesian equilibria with WM beliefs: However for Z small enough, the generic WM equilibrium is Pooling Extremism with Anti-Incumbency
- ▶ With Z large: generic multiplicity, but of course all with extremism

Remarks

- ▶ Equilibrium with Pooling extremism and Voter indifference is non-generic in the parameter space
- ▶ Multiplicity of perfect Bayesian equilibria with WM beliefs: However for Z small enough, the generic WM equilibrium is Pooling Extremism with Anti-Incumbency
- ▶ With Z large: generic multiplicity, but of course all with extremism
- ▶ Multiplicity can arise out of arbitrary variation on off-equilibrium beliefs as well!

WM-PBE with Challenger Determined Degree of Extremism

- ▶ Suppose now that when he decides to contest, he chooses a platform $z \in \{0\} \cup \mathbb{R}_{++}$
- ▶ Equilibrium: $(z^*, p^*, \rho^*, x^*, Q^*)$ and extension of W-Monotone Beliefs:

WM-PBE with Challenger Determined Degree of Extremism

- ▶ Suppose now that when he decides to contest, he chooses a platform $z \in \{0\} \cup \mathbb{R}_{++}$
- ▶ Equilibrium: $(z^*, p^*, \rho^*, x^*, Q^*)$ and extension of W-Monotone Beliefs:
- ▶ **Off-the-equilibrium beliefs** μ_{z^*} over \mathbb{R}_+ : *(i) If any extremism $z' \geq z^*$ is observed and the voter receives no further information from the media, then he believes that the challenger is of type H with probability ρ^* ; otherwise media information reveals type and the belief follows the revelation;*

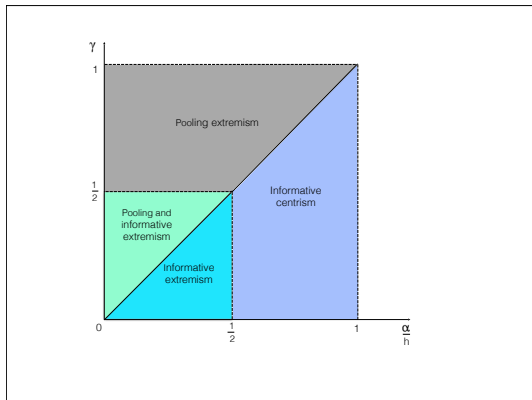
WM-PBE with Challenger Determined Degree of Extremism

- ▶ Suppose now that when he decides to contest, he chooses a platform $z \in \{0\} \cup \mathbb{R}_{++}$
- ▶ Equilibrium: $(z^*, p^*, \rho^*, x^*, Q^*)$ and extension of W-Monotone Beliefs:
- ▶ **Off-the-equilibrium beliefs** μ_{z^*} over \mathbb{R}_+ :
 - (i) If any extremism $z' \geq z^*$ is observed and the voter receives no further information from the media, then he believes that the challenger is of type H with probability ρ^* ; otherwise media information reveals type and the belief follows the revelation;
 - (ii) If any extremism $z' < z^*$ is observed then with no further information from the media, the voter believes that the challenger is of type L with probability 1 and otherwise the belief follows media revelation.

WM-PBE with Challenger Determined Degree of Extremism

- ▶ Suppose now that when he decides to contest, he chooses a platform $z \in \{0\} \cup \mathbb{R}_{++}$
- ▶ Equilibrium: $(z^*, p^*, \rho^*, x^*, Q^*)$ and extension of W-Monotone Beliefs:
- ▶ **Off-the-equilibrium beliefs** μ_{z^*} over \mathbb{R}_+ :
 - (i) If any extremism $z' \geq z^*$ is observed and the voter receives no further information from the media, then he believes that the challenger is of type H with probability ρ^* ; otherwise media information reveals type and the belief follows the revelation;*
 - (ii) If any extremism $z' < z^*$ is observed then with no further information from the media, the voter believes that the challenger is of type L with probability 1 and otherwise the belief follows media revelation.*
- ▶ Political Gloom: $\alpha < h/2$ and $\gamma h < \alpha$,

WM-PBE with Challenger Determined Degree of Extremism (Voter indifference): small k



WM-PBPE with Challenger Determined Degree of Extremism

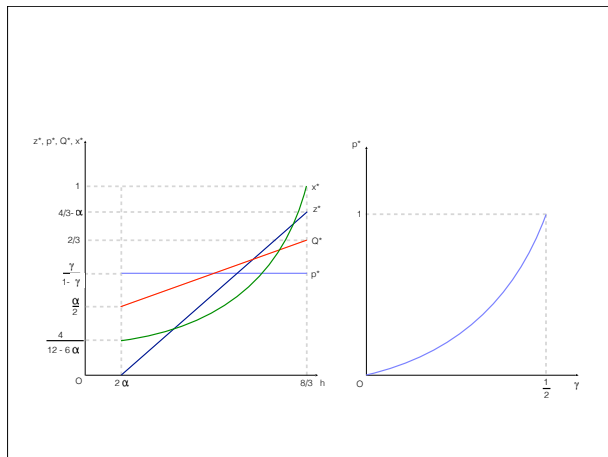


Figure: **Comparative statics!** with challenger determined degree of extremist platform Z (for $k = 1/2$ and $c(Q) = Q^2/2$)

Are these beliefs reasonable?

Are these beliefs reasonable?

Are these beliefs reasonable? Refinement: Monotonicity

- ▶ Consider types H and L ; a deviation platform y from the equilibrium, resulting beliefs $\rho(y)$ and a best response by the media Q and by the voter x . Let $G(t)$ be the gain of type t from making this deviation relative to the equilibrium being considered.
 - (i) If $G(H) > G(L) \geq 0$ then $\rho(y) \geq \rho^*$, the equilibrium belief,
 - (ii) if $G(L) > G(H) \geq 0$ then $\rho(y) \leq \rho^*$,
 - (iii) if $G(H) = G(L) \geq 0$ then no restriction is placed on $\rho(y)$ and
 - (iv) if $G(H) > 0$ but $G(L) < 0$ then $\rho(y) = 1$ while if $G(H) < 0$ but $G(L) > 0$ then $\rho(y) = 0$.

Refinement: Consistency

- (i) If $\rho(y) \geq \rho^*$ and Q and x are best responses, then $G(H) > G(L)$ and
- (ii) if $\rho(y) \leq \rho^*$ and Q and x are best responses, then $G(L) > G(H)$.

Connection with D1, Perfect Sequential Equilibrium and Neologismproofness

- ▶ The Consistency property is a specialisation to our model of Perfect Sequential Equilibrium (PSE), the refinement concept formulated independently by Farrell (1985) and by Grossman and Perry (1986).

Connection with D1, Perfect Sequential Equilibrium and Neologismproofness

- ▶ The Consistency property is a specialisation to our model of Perfect Sequential Equilibrium (PSE), the refinement concept formulated independently by Farrell (1985) and by Grossman and Perry (1986).
- ▶ We have not labelled our refinement PSE because of the Monotonicity property above, which is a plausible and weak restriction on beliefs in our setting, asserting essentially that the deviation is weakly more likely from the type that gains more from it.
- ▶ We have not attempted to generalise it to a broader class of problems because this is not the main thrust of the paper. For certain specific functional forms, Monotonicity is equivalent to the concept of D1 formulated by Banks and Sobel (1987) and is enough to refine away equilibria other than the ones we focus on.

Summary

- ▶ We studied how unbiased media can trigger extremism and its information conveying role
- ▶ Extremism is a way to capture voter's 'attention' i.e. generate the demand for news
- ▶ A profit-seeking media supplies the news, knowing there is a market for news for extreme candidates
- ▶ Good for high quality candidates; this can to an extent keep low quality candidates out but at the cost of triggering extremist policies
- ▶ Electoral competition can lead to endogenous signalling which helps voters learn about candidate types even if media coverage fails to add information

Free internet

- ▶ The results obtained in this paper are not hostage to having a profit maximising dominant media.

Free internet

- ▶ The results obtained in this paper are not hostage to having a profit maximising dominant media.
- ▶ To look at the other extreme of the information market that is gaining more and more relevance in today's age is the internet where there is an unlimited supply of information about candidates – specifically about unknown challengers.
- ▶ This information is available to anybody who is willing to spend enough time 'surfing'.
- ▶ Searching, assimilating and understanding this information is of course costly for the voter.

Free internet

- ▶ The results obtained in this paper are not hostage to having a profit maximising dominant media.
- ▶ To look at the other extreme of the information market that is gaining more and more relevance in today's age is the internet where there is an unlimited supply of information about candidates – specifically about unknown challengers.
- ▶ This information is available to anybody who is willing to spend enough time 'surfing'.
- ▶ Searching, assimilating and understanding this information is of course costly for the voter.
- ▶ We can rename the variable Q as the amount of time spent by the voter on searching the internet to obtain information and $c(Q)$ the cost of doing so.

Empirical implication

Empirical implication

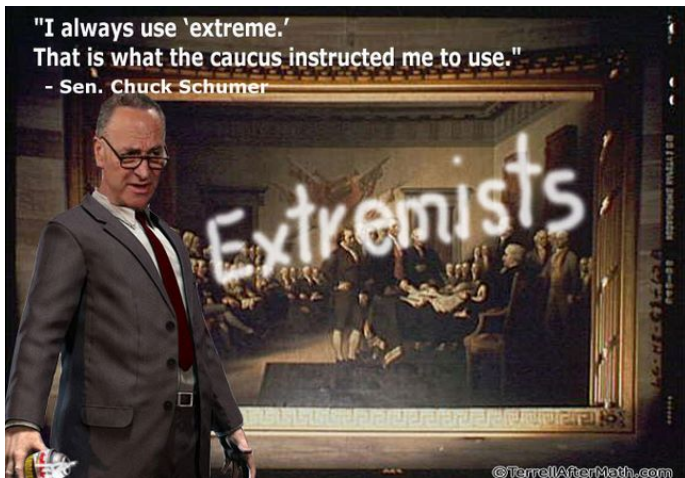
- ▶ *Question 1:* Is there is a non monotonic relation between extremism and media coverage? More extreme candidates get higher free media coverage up to a certain degree of extremism and then media coverage falls

Empirical implication

- ▶ *Question 1:* Is there is a non monotonic relation between extremism and media coverage? More extreme candidates get higher free media coverage up to a certain degree of extremism and then media coverage falls
- ▶ *Question 2:* Do extreme candidates arise when voters are pessimistic about the quality of both the incumbent and the challenger (though more for the unknown challenger) and the degree of extremism increases as voters attach higher importance to candidate quality/governance

Empirical implication

- ▶ *Question 1:* Is there is a non monotonic relation between extremism and media coverage? More extreme candidates get higher free media coverage up to a certain degree of extremism and then media coverage falls
- ▶ *Question 2:* Do extreme candidates arise when voters are pessimistic about the quality of both the incumbent and the challenger (though more for the unknown challenger) and the degree of extremism increases as voters attach higher importance to candidate quality/governance
- ▶ *Question 3:* When media coverage about quality of an extremist challenger is significantly informative, voters vote by following media revelation; otherwise, that is when coverage fails to reveal anything substantial about candidate quality, higher coverage size increases the chances for such a challenger to win



Thanks for your attention!