Information and Mass Media

Valentino Larcinese The Political Economy of Public Policy

INFORMATION AND DECISIONS

- Perfect information: behaviour reveals agents' preferences (theory of revealed preferences)
- Imperfect information: behaviour stems from *preferences* and *beliefs*.
- As for preferences, rational choice theory requires beliefs to satisfy some *consistency requirements*.

Does information affect the way preferences are reflected into public policies?

INFORMATION IN ELECTIONS

"A rational man can become well informed for four reasons: 1) he may enjoy being informed for its own sake, so that information as such provides him with utility; 2) he may believe the election is going to be so close that the probability of his casting the decisive vote is relatively high; 3) he may need information to influence the votes of others (...); 4) he may need information to influence the formation of government policy as a lobbyist. Nevertheless, since the odds are that no election will be close enough to render decisive the vote of any one person, or the votes of all those he can persuade to agree with him, the rational course of action for most citizens is to remain politically uninformed" [Downs, 1957]

 \Rightarrow Rational Ignorance

ASYMMETRIC INFORMATION

• between citizens and politicians \Rightarrow accountability problem

It is a consequence of rational ingnorance and/or the fact that politicians have access to other (better) sources of information

• among citizens, or groups of citizens \Rightarrow redistributive issues

Citizens have different access to information, different incentives to gather information and/or ability to process it. Example: education.

CITIZENS-POLITICIANS

- Can be represented as an agency relationship ⇒ there is an agency cost: control is possible but imperfect
- Both adverse selection (electing a candidate) and moral hazard (policymaking by incumbent)
- Perfect information: no problem
- Imperfect information: politicians are able to extract rents from citizens. Elections work as an (imperfect) incentive device. Evidence by Besley-Case (1995).
- More severe asymmetric information allows larger rents for politicians.
- This problem is made more serious because of multiprincipal agency

CITIZENS' HETEROGENEITY

- Not all citizens are equally informed.
- Idiosyncratic differences (e.g. a specific taste for politics) wash out in the aggregate .
- Differences matter when they can systematically be related to relevant variables.
- Example: what if the rich are both better informed and more conservative? (Larcinese 2005)

• CITIZENS' KNOWLEDGE OF POLITICS: WHAT THE DATA SAY

- Campbell et al. (1960): the electorate "knows little about what government has done (...) or what the parties propose to do".
- Converse (1964): only 10% of the interviewed could define the meaning of words like "liberal" or "conservative".
- Neuman (1986): "even the most vivid concepts of political life (...) are recognized by only a little over half the electorate"
- Delli Carpini & Keeter (1996): "only 13% of the more than 2000 political questions examined could be answered correctly by 75% or more of those asked, and only 41% could be answered correctly by more than half the public".
- Political knowledge highly correlated with education, income, race, gender, age. However, some voters tend to be *specialists* (e.g. blacks more informed than whites on ratial issues, females more than males on gender issues)

INFORMATION AND VOTING BEHAVIOUR

- Information might increase participation. Evidence that political knowledge is correlated with turnout. Some stylized facts:
- Campaign spending increases voter turnout
- People who are contacted by campaign workers prior to an election are more likely to vote
- Education and age are positively correlated with the probability of voting
- People who recently moved are less likely to vote
 - Strategic delegation by the uninformed ⇒ information increases participation. Requires "common values".
 - Information might increase responsiveness to platforms.

- "Behaviour irrelevance hypothesis": voters use short-cuts (endorsements, partisanship...) (Lupia - McCubbins)
- "Outcome irrelevance": a poorly informed population may be able to reach the same outcome as a perfectly informed one (Feddersen - Pesendorfer).

INFORMATION AND TURNOUT (Matsusaka)

• The calculus of voting (Riker-Ordeshook, 1968):

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Vote if PB + D > C
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- Two candidates 1 and 2 \Rightarrow Z(1) & Z(2). Define Z = Z(1) Z(2). Assume $Z \in \{-1, 1\}$
- Two states of the world: $M \in \{-1, 1\}$
- Citizens' payoff from electing candidate t: V(t) = MZ(t)
- "Vote Confidence": $\varphi = \max\{\Pr(MZ = 1|I), \Pr(MZ = -1|I)\}.$

$$E(B) = \varphi \times 1 + (1 - \varphi) \times (-1) = 2\varphi - 1$$

$$\Rightarrow \text{ Vote if } P(2\varphi - 1) + D > C$$

EMPIRICAL EVIDENCE

- Most existing evidence shows that political knowledge is correlated with turnout [Delli Carpini & Keeter (1996)]. Political knowledge, however, is not exogenous.
- Stromberg (2004): radio fostered turnout and increased New Deal spending in certain counties
- Lassen (2005): naural experiment from the Copenhagen referendum on decentralization
- Gerber & Green (2000): experimental evidence on the impact of personal canvassing

ENDOGENEITY (Larcinese 2007, Public Choice)

Define a citizen's net utility from voting as

$$U_0 = PB(\delta) + D - C. \tag{1}$$

Benefit from using a better estimate $\widehat{\delta}$ of the:true δ

$$\Delta = E_{\delta} W(\hat{\delta}; \delta) - E_{\delta} W(\tilde{\delta}; \delta)$$
(2)

Citizen acquires the larger sample if:

$$E_{\delta}W(\widehat{\delta};\delta) - E_{\delta}W(\widetilde{\delta};\delta) > c \tag{3}$$

Including a sense of civic duty:

$$E_{\delta}W(\hat{\delta};\delta) - E_{\delta}W(\tilde{\delta};\delta) + b > c$$
(4)

But D and b are likely to be correlated.

Now approximate U_0 by using a linear random utility model and include information

$$U_{1} = \beta_{1} Info + \beta_{2}' \mathbf{X} + \varepsilon$$
(5)

Estimation by Probit (ε assumed to be normally distributed)

$$\Pr[T = 1|Info, \mathbf{X}] = \Pr[\varepsilon < \beta_1 Info + \beta_2' \mathbf{X}] = \mathbf{F}(\beta_1 Info + \beta_2' \mathbf{X}).$$
(6)

Endogeneity of Info means that the "true" model is

$$Info = \alpha'_{1}\mathbf{X} + \alpha'_{2}\mathbf{Z} + u_{1}$$
(7)

$$U_1 = \beta_1 Info + \beta'_2 \mathbf{X} + u_2 \tag{8}$$

Use a two-step probit procedure. 1) estimate the Info equation by OLS and get the residuals \hat{u}_1 . Then include \hat{u}_1 in the turnout equation.

I provide evidence of causal impact of information on turnout in Britain

DATA

- British General Election Study (BES) 1997
- Electoral data
- Census 1991 data
- Instrumental variables: proxies of information supply

- bigshot: current and past members of cabinet, current members of shadowcabinet and leader of the LibDem

- salience: above average coverage in Guardian, Independent, Times (but not included in bigshot)

- bbc100: the expected closest Conservative-held constituencies

RESULTS

- Political knowledge increases the propensity to vote.
- Socio-demographic variables with little direct impact on turnout can have a vast impact through their effect on political knowledge ⇒political representation is more socioeconomically biased of what simple analysis of turnout could reveal
- Mass media have an (indirect) impact on participation
- Our results are not compatible with the "behaviour irrelevance hypothesis".
- The availability of information increases informed participation, making desirable outcomes more likely

Tab. 5:	First	stage	regressions
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Dependent variable: information	(1)	(2)
	(1)	(-)
bbc100	0.343***	0.351***
bigshot	(3.17)	(3.12)
bigshot	(3.21)	(3.12)
media salience	0.192*	0.217*
	(1.76)	(1.96)
age	0.021**	0.017**
-	(2.57)	(2.08)
age2	-0.021**	-0.018**
	(2.42)	(2.17)
married	0.043	0.059
gender	(0.84)	-0.006
gender	(0.56)	-0.000
asian	-0.504***	-0.413***
	(4.11)	(3.50)
black	0.187	0.265
	(1.06)	(1.57)
union member	0.189***	0.177***
	(4.60)	(4.31)
length of residence	0.006***	0.007***
full time ich	(4.89)	(5.44)
	-0.089	-0.088
house owner	0.081	0.082
	(1.48)	(1.50)
quality newspaper reader	0.358***	0.243***
	(4.69)	(3.19)
canvasser	0.191***	0.199***
·	(3.71)	(3.81)
voted in 1992	0.244***	0.181***
aware of being registered	(4.05)	(2.99)
aware of being registered	(0.97)	(0.65)
retired	0.169	0.140
	(2.14)	(1.84)
marginality	-0.511**	-0.502**
	(2.39)	(2.37)
degrees	-0.110	-0.692
	(0.08)	(0.54)
unemployment rate	1.///	0.936
population density	-0.040	(0.60) -0.024
population density	(1.22)	(0.74)
aggregate turnout	0.935	1.036
	(1.16)	(1.30)
political interest		0.134***
		(5.21)
ideological self_placement		0.092***
party attachment		(5.04)
pany attachment		-0.111
		(2.20)
education	[0.00]***	[0.13]
income	[0.47]	[0.41]
church attendance	[0.18]	[0.07]*
Observations	2882	2843
r-squareu	0.1727	0.2089

All regressions include a constant and regional dummies. Robust z-statistics in round brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. For categorical variables (education, income and churchgoer) we report in square brackets the p-value of a Wald test and use stars to indicate the joint significance of the coefficients.

Tab. 3: Information and Turnout: probit estimates

Dependent variable: Turnout	probit	probit	two-step probit	two-step probit
information	0.047***	0.039***	0.119*	0.126**
	(5.06)	(4.11)	(1.85)	(2.03)
age	-0.002	-0.001	-0.004	-0.003
	(0.69)	(0.35)	(1.14)	(1.37)
agez	0.003	0.001	0.004	0.003
married	0.03)	0.041*	0.039*	0.035
mamou	(1.87)	(1.86)	(1.70)	(1.57)
gender	-0.021	-0.021	-0.023	-0.020
-	(1.13)	(1.13)	(1.20)	(1.06)
asian	0.086	0.050	0.109*	0.078
	(1.53)	(0.85)	(1.95)	(1.39)
black	-0.034	-0.134	-0.049	-0.167
	(0.29)	(0.93)	(0.40)	(1.10)
union member	0.006	0.005	-0.007	-0.010
length of residence	(0.30)	(0.23)	(0.29)	(0.44)
length of residence	(1.38)	(1.27)	(0.49)	(0.12)
full time job	-0.032	-0.034	-0.026	-0.026
,	(1.36)	(1.47)	(1.07)	(1.12)
house owner	0.030	0.041*	0.024	0.034
	(1.40)	(1.92)	(1.13)	(1.57)
quality newspaper reader	0.034	0.002	0.011	-0.019
	(1.10)	(0.06)	(0.30)	(0.54)
canvasser	0.057***	0.050^^^	0.042**	0.031
voted in 1002	(3.24)	(2.87)	(2.01)	(1.51) 0 177 ***
Voled III 1992	(10.30)	(8.25)	(8.51)	(7.24)
aware of being registered	0 708***	0 703***	0 705***	0 702***
	(6.21)	(6.95)	(6.23)	(7.07)
retired	-0.017	-0.021	-0.03	-0.035
	(0.44)	(0.57)	(0.78)	(0.90)
marginality	-0.014	-0.014	0.031	0.043
	(0.22)	(0.21)	(0.42)	(0.59)
degrees	0.108	0.163	0.101	0.205
unomployment rote	(0.24)	(0.36)	(0.22)	(0.45)
unemployment rate	(0.57)	(0.27)	(0.26)	0.030
population density	0.010	0.011	0.012	0.013
population density	(0.94)	(1.02)	(1.18)	(1.19)
aggregate turnout	0.398	0.320	0.284	0.171
	(1.60)	(1.33)	(1.10)	(0.67)
political interest		0.030***		0.019*
		(3.51)		(1.81)
ideological self_placement		0.011*		0.003
party attachment		(1.80) 0 120***		(0.36)
party attachment		(7.04)		(7.20)
first stage residuals		(1.04)	-0.073	-0.090*
			(1.32)	(1.66)
	10 001	[0, 40]	10.041	[0,00]
education	[0.32]	[0.40]	[0.64]	[0.03]
income	[0.00]***	[0.00]***	[0.00]***	[0.00]***
church attendance	[0.06]*	[0.03]**	[0.12]	[0.08]
Observations	2882	2843	2882	2843
Pseudo-R2	0.1620	0.1963	0.1626	0.1973
Predicted P (at the mean)	0.7922 0.8278	0.7924	0.7922	0.7924 0.8384

The table reports marginal effects at the mean for continuos variables and the probability variation determined by a switch from 0 to 1 for dummy variables. All regressions include a constant and regional dummies. Robust z-statistics in round brackets. Standard errors for the variable "information" and residuals in columns 3 and 4 have been calculated by boostrap. * significant at 10%; ** significant at 5%; *** significant at 1%. For categorical variables (education, income and churchgoer) we report in square brackets the p-value of a Wald test and use stars to indicate the joint significance of the coefficients.

line figure Click here to download line figure: FIG1.pdf



THE IMPACT OF POLITICAL COMMUNICATIONS

"Some kind of *communication* on some kind of *issues*, brought to the attention of some kind of *people* under some kinds of *conditions*, have some kinds of *effects*" [Berelson, 1948]

"The mass media have been a source of great frustration to social scientists" [Zaller, 1996]

- Theories of Mass Propaganda (Lippmann, 1922; Hovland et al., 1949)
- Theories of Minimal Effects (Lazarslfeld *et al.*, 1944; Berelson *et al.*, 1954; Katz&Lazarslfeld, 1955)
- Theory of Uses and Gratifications (Blumler&McQuail, 1968; Ferejohn & Kuklinski, 1990; Zaller, 1991)

We need to know what people use the media for before asking what the effects of the media are.

TYPE OF EFFECTS

• Cognitive effects: change in beliefs/expectations.

Not necessarily implies a change in behaviour (switch from a party to another, or from abstention to voting, or from voting to abstention).

- Agenda setting. What should voters think about? Issue ownership.
- Possible long term effects on values & preferences.

IDENTIFICATION PROBLEMS in empirical investigation

- simultaneity problems (supply or demand driven?)
- not enough variation of independent variables
- "The mass media routinely carry competing messages (...); the effects tend to be mutually canceling in ways that produce the illusion of modest impact" [Zaller]. Zaller introduces the idea of "reception gap".

MEDIA BIAS AND PUBLIC POLICY

- Herman & Chomsky (1988); Stromberg (2002)
- Mass media target "groups" which are more valuable to advertisers, i.e. larger, richer, better educated etc.

 \Rightarrow competing office-seeking candidates will target the same groups \Rightarrow "mass media bias in public policy"

- Do media discriminate among electoral constituencies?
- Direct test of the first part of Stromberg's model.

LARCINESE - 2007, Journal of Theoretical Politics

- Study of a British newspaper during the 1997 campaign. The empirical investigation is based on a model of political information demand and mass media competition
- If citizens vote instrumentally then

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marginality \uparrow \Rightarrow demand for inf o \uparrow \Longrightarrow info supply \uparrow
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 In equilibrium, if voters act instrumentally, then info about marginal constituencies is higher

• Summary of theoretical results:

Other things equal, information supply is higher in constituencies with a closer electoral race, more densely populated, and where citizens are on average more valuable to advertisers. The effect of the size of the electorate is uncertain. **Tested on the 1997 general election in Britain RESULTS**

- Evidence of instrumental behaviour in political information acquisition
- Mass media discriminate:
- Marginality
- Readers' value to advertisers
- Population density
- Size of constituency
 - Presumption of media bias in public policy

Dependent Variable = Ln(News)					
	1	2	3	4	5
Marginality97	2.9645** (2.15)				
Abs. Marginality97		-0.0734** (2.08)			
Marginality92			1.3230 (1.07)		
Marginal Conservative Const.				1.9753*** (3.54)	1.7727*** (3.31)
Density	0.1440**	0.1469**	0.1294*	0.1102	0.1463**
	(2.00)	(2.04)	(1.76)	(1.49)	(2.20)
Electorate/1000	0.0478*	0.0613**	0.0581**	0.0541**	0.0541**
	(1.89)	(2.52)	(2.37)	(2.24)	(2.23)
Turnout	-0.0553 (1.02)	-0.0379 (0.73)	-0.0260 (0.50)	-0.0616 (1.19)	
Big shot	5.2560***	5.2253***	5.3121***	5.3408***	5.3453***
	(8.82)	(8.69)	(8.97)	(9.10)	(9.06)
Average Age	-0.2058	-0.2036	-0.1270	-0.1097	-0.1183
	(1.37)	(1.35)	(0.85)	(0.73)	(0.79)
Inactive	0.2603**	0.2525**	0.2099*	0.2098*	0.2127*
	(2.06)	(2.00)	(1.66)	(1.67)	(1.70)
Unemployment	-0.2975***	-0.2961***	-0.3047***	-0.3200***	-0.2903***
	(2.58)	(2.58)	(2.64)	(2.79)	(2.57)
HighD	0.0506	0.0424	0.0481	0.0631	0.0506
	(0.74)	(0.62)	(0.69)	(0.92)	(0.75)
GLondon	1.5948**	1.6131**	1.8055**	1.9040**	1.7684**
	(2.10)	(2.13)	(2.42)	(2.55)	(2.41)
Constant	-8.9036	-7.8142	-10.8558	-7.8509	-12.3878**
	(1.35)	(1.16)	(1.66)	(1.20)	(2.37)
Obs	641	641	641	641	641
R-squared	0.1363	0.1359	0.1314	0.145	0.1432

Table 3: Information Supply (OLS)

Note: robust standard errors. T-statistics in round brackets.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4: Newspaper readership (quality papers)(Probit marginal effects)

Dependent Variable = Quality Paper Reader

	1	2	3	4	5
Marginality97	0.0947*** (2.62)	0.1091*** (3.09)			
Abs. Marginality97			0.0033*** (3.53)		
Marginality92				0.0195 (0.53)	
Marginal Conservative Const.					0.0115 (0.51)
Electorate/1000	0.009 (0.84)	0.009 (0.88)	0.0014 (1.33)	0.0016 (1.55)	0.0017* (1.65)
Age	0.0063** (2.46)	0.0065*** (2.62)	0.0065*** (2.61)	0.0069*** (2.74)	0.0069*** (2.73)
Age2	0.0027 (1.09)	0.0032 (1.32)	-0.0032 (1.30)	-0.0035 (1.42)	-0.0035 (1.41)
Sex	0.045*** (3.36)	0.049*** (3.73)	0.0482*** (3.69)	0.0503*** (3.79)	0.0507*** (3.80)
Married	-0.0189 (1.24)	-0.0124 (0.83)	-0.0115 (0.77)	-0.0157 (1.03)	0.0157 (1.02)
Asian	0.0617 (1.07)	0.0593 (1.11)	0.0613 (1.16)	0.0505 (0.95)	0.0516 (0.96)
Black	0.0241 (0.38)	0.0438 (0.69)	0.0406 (0.65)	0.0193 (0.32)	0.0190 (0.32)
Length of Resid.	-0.0012*** (2.69)	-0.0010** (2.41)	-0.001 **(2.40)	-0.0011*** (2.61)	-0.0012*** (2.65)
Registered	-0.1311* (1.78)	-0.0833 (1.16)	-0.0831 (1.16)	-0.0839 (1.16)	-0.0835 (1.16)
Voted92	-0.015 (0.82)	-0.0193 (1.08)	-0.0192 (1.07)	0.0198 (1.08)	-0.0204 (1.12)
Ideology	0.0186*** (5.16)	0.018*** (5.20)	0.018*** (5.20)	0.018*** (5.15)	0.0181*** (5.18)
GLondon	0.0559** (2.30)	0.0551** (2.35)	0.0523** (2.26)	0.0563** (2.34)	0.0572** (2.36)
Scotland	-0.0223 (1.05)	-0.0219 (1.06)	-0.024 (1.17)	-0.0212 (1.01)	-0.0109 (0.36)
Wales	-0.0000 (0)	-0.0054 (0.18)	-0.0045 (0.15)	-0.011 (0.36)	-0.0195 (0.93)
Big shot	-0.0206 (0.93)	-0.0235 (1.10)	-0.0238 (1.12)	-0.0166 (0.73)	-0.0163 (0.71)
Education	0.0318*** (8.73)	yes	yes	yes	yes
Income	0.0137*** (7.28)	yes	yes	yes	yes
Churchgoer	0.0094*** (3.78)	yes	yes	yes	yes
Economic Activity	yes	yes	yes	yes	yes
Obs.	2807	2807	2807	2807	2807
Log-Likelihood	-906.97	-864.74	-863.01	-870.57	-870.56
Pseudo-R2	0.2291	0.2650	0.2664	0.2600	0.2600

Note: the table reports marginal effects at the mean for continous variables and the probability variation determined by a switch from 0 to 1 for dummy variables. z-statistics from robust standard errors are in round brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

LARCINESE, PUGLISI, SNYDER, mimeo MIT (Evidence on agenda-setting behaviour of US newspapers)

Do media outlets behave in a partisan agenda-setting fashion?

- The press "may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about." [Cohen, 1963]
- The theory of agenda-setting posits that mass media can influence public opinion by manipulating the salience attributed to issues (McCombs & Shaw [1972])
- We provide a test of whether US newspapers cover economic news in a way which is consistent with the agenda-setting hypothesis

The agenda setting hypothesis

- Readers cannot distinguish between
 - a) "I did not see any news about X today because nothing important happened regarding X"
 - b) "I did not see any news about X today because, although something important happened, the media decided not to publish it".
 - Maily a poliscience-sociology literature. A sort of agenda-setting occurs in Besley-Prat (2006).
- Policy and political implications:
 - Politicians induced to give priority to issues perceived to be more relevant
 - Parties are usually perceived to have different competence in dealing with given problems ("Issue ownership": Petrocick[1996])

The idea

- We look at the amount of coverage devoted to economic issues by a large sample of U.S. newspapers during the last decade, as a function of the real value of the economic figure and the political affiliation of the incumbent president.
- We check whether the differential coverage of the same economic variable under presidents of different political affiliations is correlated with the endorsement partisanship of each newspaper.
- This amounts to asking whether editorial policy "spills over" from the editorial page to the choice of news worth reporting



Unemployment rate



Analysis of simple difference-in-differences coefficients

First look at the data: define $y_{jt}^i = n_{jt}^i - \bar{n}_{j}^i$ (omit index *i*) and for each newspaper run

$$y_{jt} = \alpha_j + \beta_j x_t + \gamma_j \mathbb{I}_{Dt} + \delta_j (x_t \cdot \mathbb{I}_{Dt}) + \text{controls} + \epsilon_{jt}^i$$
(9)

where controls include linear time trend and log size of newspaper.

Look at simple correlation of $\hat{\delta}_j$ with $\hat{\mu}_j$, for each issue.









Our conclusions

"The mass media have been a source of great frustration to social scientists" [Zaller, 1996]

- Robust evidence of partisan bias in the coverage of unemployment; no evidence for what concerns inflation, budget deficit, trade deficit
- A promising agenda: the scientific study of mass media
- Our machine-based approach has many advantages compared to humanbased content analysis: above all **REPLICABILITY**
- Part of a larger comparative project: analyse moral issues in the US and agenda setting in other countries (UK and Italy so far)