Collective Emotions and Protest Vote

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Motivation: emotions and voting

- Emotions may influence voting behavior in a number of ways (Redlawsk et al., 2017):
  - perceived valence of a candidate
  - perceptions the salience of different policy issues
  - **meanings and objectives** of the act of voting.
- Here we study how *frustration or anger* lead voters to cast a ballot with the intent of
  - expressing their frustration
  - *punishing* a politician that disappointed them.
- Such behavior has been associated to the emergence of protest vote and populism (e.g. Roubini, 2018).

Motivation: social comparisons and perceived injustice

- Individuals develop a subjective sense of justice by comparing their position with the position of others (relative deprivation - e.g., Kawakami and Dion, 1995)
- Individuals identifying with a relatively deprived group are more likely to perceive their position as socially injust and more likely to develop group-based anger (e.g., Simon, Pantaleo, Mummendey, 1995)

Motivation: group emotions

- Group identification may lead an individual to internalize the emotions of other ingroups (Mackie, 2000).
- Cohesive communities might experience group-wide aggrievement when they perceive a common threat (Wuthnow, 2018)
- The stronger the sense of community, the stronger a sense of anger towards the outgroup (the "others"- Mackie and Smith, 2015; Akerlof and Kranton, 2000)
- Since bad relative position of ingroups is, at least partly, associated to past policies, group-based anger is often directed against the political system (blame attribution - e.g., Kinder and Sears, 1985)

Our contribution

1. We introduce an emotional dimension into a model of protest voting
    1. add new element to existing debate between economic and cultural motives of protest vote and populism (e.g. Guiso et al., 2017; Inglehart and Norris, 2016; Margalit, 2018)
2. Introduce a novel collective element in the behavioral motivations of protest vote
    1. populist leaders put more emphasis on emotionally and morally relevant communal values (e.g., community, loyalty, and tradition - Enke, 2018)
    2. cultural differences with outgroups become more salient than economic differences (Gennaioli and Tabellini, 2019; Grossmann and Helpman, 2018)
3. Help understand why recent economic shocks (e.g. globalization, technological developments, austerity) have lead to *protest vote* (e.g., Colantone and Stanig, 2017; Margalit, 2017; Fretzer, 2018) rather than *demand for redistribution.*

In a nutshell...

- Individuals compare their position with the position of luckier individuals in society
  - Relatively deprived individuals are prone to think that they deserve what has been granted to others (Crosby, 1984; Crocker et al. 1987; Tropp and Wright, 1999)
- If their relative position has worsened (relative deprivation), they are aggrieved
- If they identify with a community of other aggrieved people their aggrievement is higher
- They enjoy emotional utility by expressing anger at the ballot.

Prediction

- Voters trade emotional utility from protest voting against material utility from rational voting
- Eventually, they vote strategically under plurality rule
- In equilibrium, individuals experiencing higher relative deprivation are more likely to cast a protest vote
- This is more likely to happen to individuals who identify more strongly with their community.

The model: an overview

- Three-party political system with plurality rule
- Voters enjoy material utility from given policy platforms (ideology, income, productivity...)
- They enjoy emotional utility from unseating traditional politicians (frustration, aggrievement...)
  - We also consider "warm glow": emotional utility is attached to the act of casting a protest vote *per se* (as in Pons and Tricaud, 2018).
- We characterize the equilibrium (with no complete desertion): voters coordinate in strategic voting by playing a global game (Myatt, 2007).

Empirical analysis: an overview

- UK Independence Party (UKIP): from 3.1% in 2010 to 12.6% in 2015
- Test the interaction between relative deprivation and cohesion with local community, across the 380 Local Authority Districts (LADs).
- Vote for UKIP is more likely in districts where relative deprivation has worsened more, and where social cohesion is stronger.
- Results are strong also at the individual level.

The model

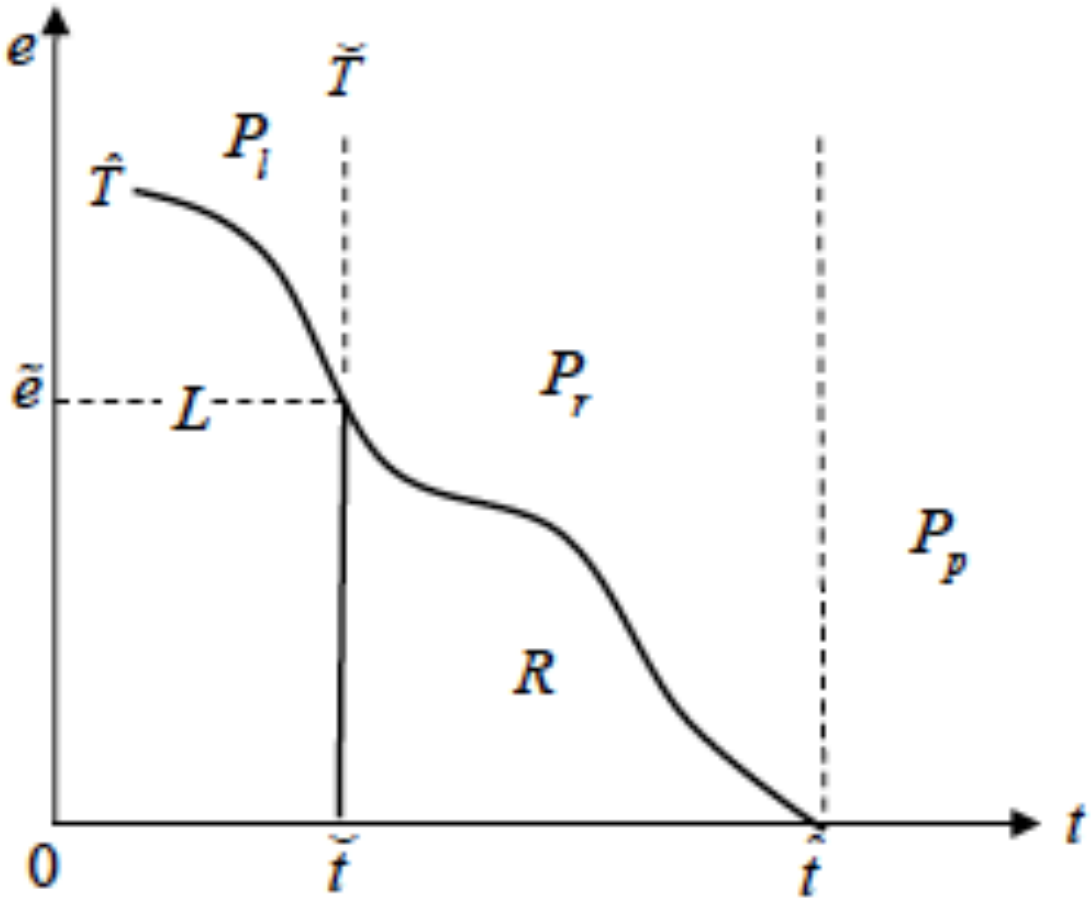
- A continuum of individuals/voters, heterogeneous in some parameter t (ideology, wealth, productivity...).
- Unidimensional policy $q \in \mathbb{R}$.
- Two "traditional" parties, l and r, and one protest party, p.
- Three exogenous platforms: $q^l < q^r < q^p$.
  - q^l egalitarianism and redistribution
  - q^r conservatism and reduced taxation
  - q^p rightish (anti-immigration, anti-EU,... - Becker, Novy, and Fetzer, 2017)

Preferences

- Traditional parties $q = q^l, q^r \rightarrow$ only material utility
- Protest party $q = q^p \rightarrow$ material and emotional utility,

$$V(t^i, q^l), \qquad V(t^i, q^r), \quad \text{and} \quad V(t^i, q^p) - c + e^i$$

  - t^i is i's *material* type (also captures ideology).
  - e^i is i's *emotional* type: psychological benefit of expressing anger at the ballot (aggrievement)
  - c: cost of protest voting (incompetence - Di Tella and Rotemberg, 2018; Dal Bo' et al., 2018; long-run tradeoffs - Guiso et al., 2017 - risk premium - Panunzi et al., 2019).
  - Assume $V_{qt}(.) > 0$.


e
$\check{T}$
P_l
$\hat{T}$
$\tilde{e}$
L
P_r
P_p
R
t
0
$\check{t}$
$\hat{t}$

Proposition 1

- The ideological type $\hat{t}$ of voters who are indifferent between q^p and q^r:
  - i.1) is decreasing in e; i.2) is increasing in c; i.3) is increasing in q^p and in q^r.
- ii) The ideological type $\check{t}$ of voters who are indifferent between q^l and q^r:
  - ii.1) is independent of e and of c; ii.2) is increasing in q^l and in q^r.
- iii) There exists an aggrievement level $\tilde{e}$, such that a voter with ideological type $\check{t}$ and emotional type $\tilde{e}$, is indifferent among q^l, q^r, and q^p.
  - iii.1) $\tilde{e}$ is increasing in c, and in q^p and it is decreasing in q^l.

Aggrievement and relative deprivation

In period k; i's relative position in society is R^i_k
i's resentment, r^i, is commensurate to the *worsening* of her position in past period:

$$r^i = \max\left[0, R^i_{-1} - R^i_{-2}\right]$$

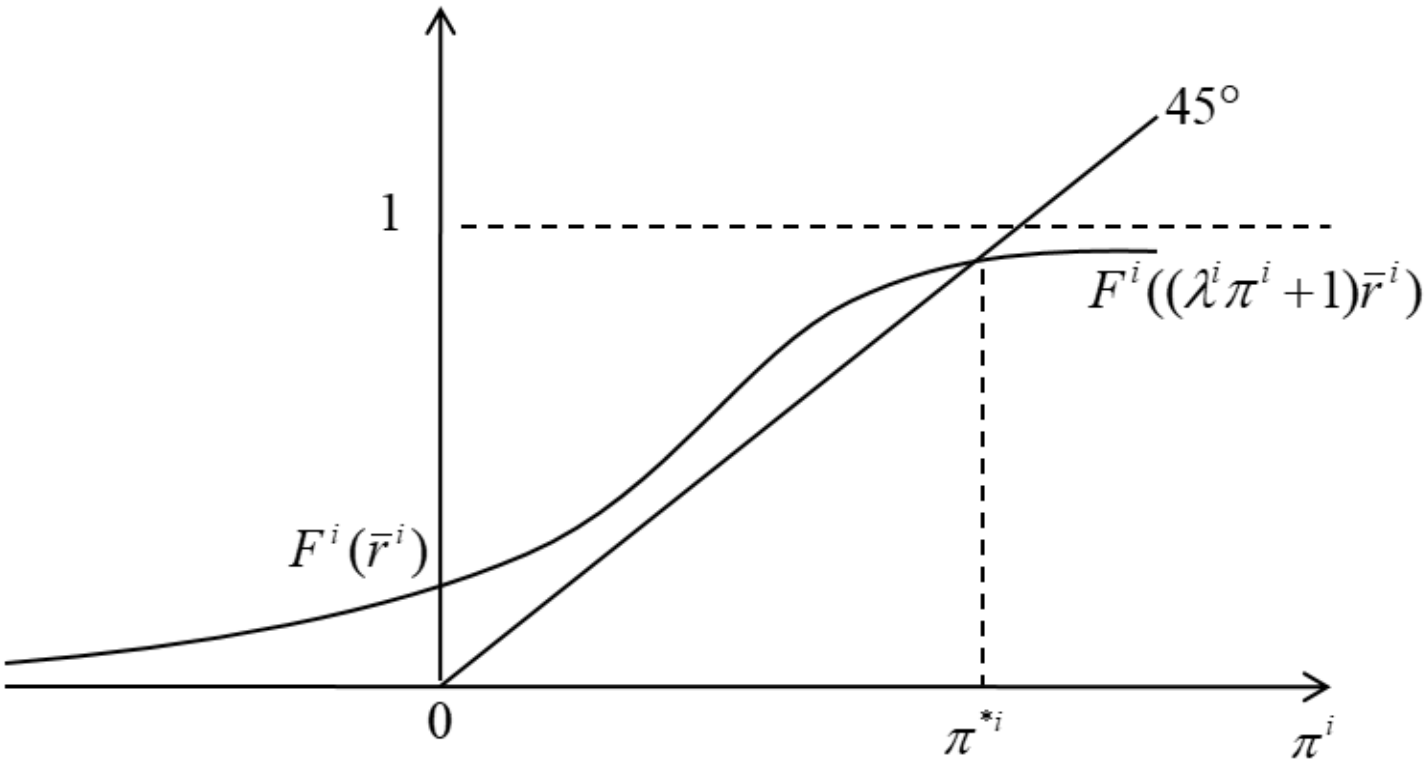
Collective emotions

- When an individual identifies with a group, she also internalizes the emotions of the group (Smith, 1993; Mackie et al., 2000)
  - λ^i: i's "social relations" (higher $\lambda^i \rightarrow$ stronger identification; also bigger group).
  - $\bar{r}^i$: average resentment within i's group
  - $\varepsilon^i \equiv \bar{r}^i - r^i$, with distribution $F^i(\varepsilon)$
- Aggrievement (note complementarity):

$$e^i \equiv \max\left[0, \lambda^i \pi^i \bar{r}^i + r^i\right]$$

  - π^i share of aggrieved people

The equilibrium



Unique equilibrium

- An individual is aggrieved if $\lambda^i \pi^i \bar{r}^i + r^i > 0$, or if $\varepsilon^i < (\lambda^i \pi^i + 1)\bar{r}^i$, which occurs with probability $\Pr(\varepsilon^i < (\lambda^i \pi^i + 1)\bar{r}^i) \equiv F^i((\lambda^i \pi^i + 1)\bar{r}^i)$.
- The share of aggrieved ingroups is:

$$\pi^i = F^i((\lambda^i \pi^i + 1)\bar{r}^i)$$

- An equilibrium π^{*i} is a fixed point of the equation. Unique equilibrium if $F^i(\bar{r}^i) > 0$, $F^i((\lambda^i + 1)\bar{r}^i) < 1$, and $\lambda^i \bar{r}^i \cdot f^i((\lambda^i \pi^{*i} + 1)\bar{r}^i) < 1$.

Implications

- Psychological benefit from protest vote is

$$e^i \equiv r^i + \lambda^i \pi^{*i} \bar{r}^i$$

- The share of aggrieved people π^{*i} is larger if
  - identification is stronger (or group is bigger)
  - the group is more homogeneous (in terms of resentment)
  - resentment is higher on average.
- Relationship is highly non linear (through π^{*i}): abrupt emotional reactions, with explosive mass of voters experiencing aggrievement.

Strategic voting

- Duverge's Law: any electoral competition with three (or more) candidates competing for one seat resolves into a two-horse race (Palfrey, 1989; Myerson and Weber, 1993; Cox, 1994).
- Why would people cast a protest vote for the trailing contender?
  - 1. imperfect coordination (Myatt, 2007)
  - 2. expressive voting (warm glow - Pons and Tricaud, 2018)

Imperfect coordination

- Voters engage in a global coordination game to vote for the most popular challenger (either r or p).
- They receive noisy signals about parties' popularity.
- They vote strategically for the most popular challenger if they expect to be pivotal.
- This leads to imperfect coordination with the trailing contender receiving a positive share of votes.

Imperfect coordination

- Coordination involves individuals who rank party l as their third-best.
- Relative preference:

$$\tilde{u}_i \equiv \log \frac{V(t^i, q^r) - V(t^i, q^l)}{[V(t^i, q^p) - c + e^i] - V(t^i, q^l)}$$

  Suppose $\tilde{u}_i < 0$ (protest party is i's first-best).
- Voter i needs to form beliefs $\hat{\eta}_i$ about the popularity of the two parties (beliefs $\hat{\eta}_i$ about the median's preferences in the group that have to achieve coordination).
- She receives a signal s^i, about the median
  - If $\hat{\eta}_i > 0$ ($\hat{\eta}_i < 0$) then she believes that party r is more (less) popular than p.

Imperfect coordination

- Then she computes her chance to be pivotal in $l - vs. - p$ and in $l - vs. - r$ ($\Pr\left[x = n - \bar{x} \middle| \hat{\eta}_i\right]$ and $\Pr\left[x = \bar{x} \middle| \hat{\eta}_i\right]$, respectively).
- She votes for p if expeceted utility is higher than voting for r.
- In other words,

$$\tilde{u}_i + \log \frac{\Pr\left[x = \bar{x} \middle| \hat{\eta}_i\right]}{\Pr\left[x = n - \bar{x} \middle| \hat{\eta}_i\right]} \leq 0$$

Coordination: equilibrium

- Myatt (2007): the voting equilibrium is unique and it is such that

$$v(\tilde{u}_i, \hat{\eta}_i) = I(\tilde{u}_i + b^* \cdot \hat{\eta}_i \leq 0)$$

  where I is the indicator function, and $b^* > 0$.
- Intuitively, $\tilde{u}_i$ captures sincere voting motivations; $b^* \cdot \hat{\eta}_i$ captures strategic motivations.

Proposition 2 (strategic and sincere protest vote)

$$v(\tilde{u}_i, \hat{\eta}_i) = I(\tilde{u}_i + b^* \cdot \hat{\eta}_i \leq 0)$$

- An individual i is more likely to vote *sincerely* for the protest party if:
  - her **relative position** in the society has worsened substantially in the last period, (higher r^i);
  - she **identifies more strongly** with her ingroup (higher λ^i);
  - her **ingroup members are more aggrieved on average** (higher $\bar{r}^i$);
  - she has a stronger material preference for the protest party (higher t^i).
- An individual is more likely to vote *strategically* for the protest party if:
  - **aggrievement is stronger among voters** who have to coordinate on either party p or r (lower $\hat{\eta}_i$)
  - people assign higher weight to their beliefs (higher b^*).

Who casts a protest vote

- Three different (not mutually exclusive) reasons.
  - First, they "ideologically" prefer party p's platform.
  - Second, they are aggrieved (stronger resentment for their unlucky position and/or stronger social ties with other aggrieved people).
  - Third, they receive strong signals about the popularity of the protest party (might be sucked into protest voting for strategic reasons).

Warm glow

- Relative utility becomes:

$$\tilde{u}_i^{wg} \equiv \log \frac{V(t^i, q^r) - V(t^i, q^l) - e^i}{[V(t^i, q^p) - c + e^i] - V(t^i, q^l)}$$

- If $V(t^i, q^r) - V(t^i, q^l) < e^i$ then i always votes sincerely for the protest party.
- Remaining voters have to coordinate. They have a weaker incentive to vote strategically (or sincerely) for party r.
- Overall warm glow leads more people to engage in protest voting in equilibrium.

Empirical setting

- UKIP support quadruples between 2010 (3.1%) and 2015 (12.6%)
- UKIP as the prototype of populist anti-elite party
  - UKIP has the characteristics of European protest and populist parties: single-issue, right-wing (Mudde, 1999; Usherwood, 2008), short-sighted (Guiso et al., 2017) and anti-elite (Van Kessel, 2015; Birch and Dennison, 2017)
- *Understanding Society* longitudinal survey available for 2009-2016 (50,000 individuals, interviewed every two years)
  - Calculate main variables from individual observations
- We observe electoral outcomes for (most of) 381 Local Authority Districts in the UK in 2010 and 2015

Main variables

Measure of relative deprivation

- How to capture the spread of economic grievances within a community?
- Start from individual relative deprivation (Chakravarty, 1997)

$$rd_{it}(y) = \frac{\sum_{jt \in B_{it}(y)} (y_{jt} - y_{it})}{n\lambda(y)}$$

- Identify respondents whose deprivation increases between t and $t-1$

$$if \quad \Delta rd_{it} > sd(rd)_t \Rightarrow rd\ \ index_{it} = 1$$

- Average to obtain the spread of deprivation in the district

$$RD_{dt} = \frac{\sum_{i \in D_t} rd\ \ index_{it}}{obs_{dt}}$$

Relative Deprivation and Gini index

Main Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. Var	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip
$\lambda_i \times \bar{r}_i$		0.067**	0.068**	0.083***	0.083***	0.100	0.035***
		[0.027]	[0.027]	[0.031]	[0.028]	[0.061]	[0.012]
λ_i	-0.031***	-0.061***	-0.061***	-0.067***	-0.067***	-0.022	-0.016**
	[0.007]	[0.016]	[0.016]	[0.019]	[0.017]	[0.033]	[0.008]
$\bar{r}_i$	-0.090***	-0.137***	-0.139***			0.011	0.025
	[0.031]	[0.037]	[0.038]			[0.067]	[0.019]
r_i			0.010		0.020	-0.045*	0.002
			[0.013]		[0.013]	[0.025]	[0.005]
Sample years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-14-15
Pre election	Y	Y	Y	Y	Y	N	N
Controls	✓	✓	✓	✓	✓	✓	✓
Wave FE	✓	✓	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓	✓	✓
Lad FE	✓	✓	✓	✓	✓		
Lad-Month FE				✓	✓		
Individual FE						✓	✓
Observations	7256	7256	7256	6954	6954	1134	23386
R-squared	0.12	0.12	0.12	0.27	0.27	0.59	0.63

Notes. Controls include Gender, Marital Status, Education, Being British, Income (log), Income (log) Squared, Age, Age Squared, Religiosity, Ethnicity and Employment Status. Column 5 and 6 include a dummy equal to 1 if respondent is interviewed before the election. Standard errors clustered at the LAD level in 1 to 5, at the individual level in 6 and 7.

Frustration and protest vote

	M: Frustration w Political Elite				M: Civicness	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Ukip	M	Ukip	M	M	M
M	0.069*		0.088**			
	[0.038]		[0.042]			
$\lambda_i \times \bar{r}_i$		0.747**		0.470	0.844**	1.137**
		[0.302]		[0.313]	[0.362]	[0.554]
λ_i		-0.135*		-0.113	-0.193**	-0.204*
		[0.079]		[0.079]	[0.084]	[0.110]
$\bar{r}_i$		-0.400		-0.270	-0.938**	-1.082**
		[0.263]		[0.286]	[0.372]	[0.520]
Baseline	✓	✓	✓	✓	✓	✓
Day FE		✓		✓	✓	✓
Observations	654	700	646	696	570	524
R-squared	0.81	0.78	0.82	0.79	0.83	0.81

Notes. Respondents interviewed in 2013 to 2015. M is a dummy equal 1 if respondent strongly agrees with "Public officials don't care much about what people like me think" (col. 1-2); or with "I don't have a say in what the government does" (col. 3-4); or disagrees with "I would be seriously neglecting my duty as a citizen if I didn't vote" (col. 5); or answers below 5 in on a 0-10 scale to "How likely is it that your vote will make a difference in terms of which party wins the election in this constituency at the next general election?" (col. 6).

The reference point

	Between vs. Within				Relative vs. Absolute			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip
$\lambda_i \times \bar{r}_i$	-0.084***	-0.009	-0.052	-0.052	-0.072*	0.003	0.001	0.004
	[0.032]	[0.018]	[0.080]	[0.080]	[0.037]	[0.027]	[0.002]	[0.013]
λ_i	0.815**	0.078	-0.003	-0.003	0.726*	-0.028	-0.007	-0.002
	[0.317]	[0.116]	[0.006]	[0.006]	[0.373]	[0.159]	[0.015]	[0.006]
$\bar{r}_i$	0.062*	0.022	0.075	0.075	0.010	0.008	0.000	0.001
	[0.036]	[0.017]	[0.070]	[0.070]	[0.050]	[0.019]	[0.002]	[0.011]
$\bar{r}_i$ as	Ineq 1	ΔIneq 1	Ineq 2	ΔIneq 2	Income	ΔIncome	Unemp	ΔUnemp
Observations	16788	1314	21458	21458	22452	196	22294	21880
R-squared	0.63	0.64	0.63	0.63	0.63	0.67	0.63	0.63

Notes. Specification is the same as column 7 in the main table. *Ineq 1* is the interquartile range of the income distribution within LADs; *Ineq 2* is median over mean income for each LAD; *Income* is the average income in the LAD; *Poverty* is the share of people below the poverty line in the LAD; Δ indicate the change over the previous year.

Alternative measures

	Group-Identification									Resentment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dep.Var	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip
$\lambda_i \times \bar{r}_i$	0.033***	0.022*	0.040***	0.049***	0.035**	0.029**	0.040**	0.051***	0.081***	0.060***	0.039***	0.033***	0.034*
	[0.008]	[0.013]	[0.014]	[0.015]	[0.014]	[0.014]	[0.018]	[0.011]	[0.026]	[0.020]	[0.013]	[0.012]	[0.018]
λ_i		-0.007	-0.015*	-0.030***	-0.021**	-0.006	-0.020*	-0.023***	-0.031**	-0.039***	-0.019**	-0.014*	-0.000
		[0.008]	[0.008]	[0.009]	[0.009]	[0.009]	[0.010]	[0.007]	[0.014]	[0.014]	[0.008]	[0.007]	[0.006]
$\bar{r}_i$	-0.011	0.032	0.020	-0.057***	-0.047***	-0.042***	-0.060***	0.045***	-0.040	0.016	0.022	0.025	-0.027*
	[0.011]	[0.020]	[0.020]	[0.017]	[0.016]	[0.016]	[0.021]	[0.016]	[0.040]	[0.027]	[0.020]	[0.018]	[0.016]
λ_i as	Avg.trust	Help	Get along	Friend	Advice	Borrow	Improve	Volun	Dem				
$\bar{r}_i$ as										$\mathbb{I}[r_i > 0]$	$\mathbb{I}[r_i > sd/2]$	$\mathbb{I}[r_i > 2sd]$	ΔPoverty
Observations	56955	23762	23522	13800	13732	13674	13736	26514	4142	23386	23386	23386	23178
R-squared	0.62	0.63	0.63	0.65	0.65	0.65	0.65	0.63	0.64	0.63	0.63	0.63	0.63

Notes. Specification is the same as column 7 in the main table. λ_i is measured as the average between 2010, 2014 and 2015 of the main community cohesion measure in column 1; agreement with "People around here are willing to help their neighbours" in column 2; disagreement with "People in this neighbourhood don't get along with each other" in column 3; agreement with "The friendships and associations I have with other people in my neighbourhood mean a lot to me" in column 4; agreement with "If I needed advice about something I could go to someone in my neighbourhood" in column 5; agreement with "I borrow things and exchange favours with my neighbours" in column 6; agreement with "I would be willing to work together with others on something to improve my neighbourhood" in column 7; answering yes to "In the last 12 months, have you given any unpaid help or worked as a volunteer for any type of local, national or international organisation or charity?" in column 8; answering satisfied or very satisfied to "On the whole, are you very satisfied, fairly satisfied, a little dissatisfied or very dissatisfied with the way democracy works in this country?". $\bar{r}_i$ is measured as the share of people in the LAD whose r_i has increased over the past years. The increase is qualified as a simple positive differential in column 10; an increase by at least half a standard deviation in column 11; an increase by two standard deviations in column 12.

Alternative Channels

C:	Internal Migration		Local News		UKIP Activism		Trade 5-Yrs		Immigration 5-Yrs		Welfare Spending	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$\lambda_i \times \bar{r}_i$	0.061**	0.036***	0.068**	0.035***	0.062**	0.032**	0.061**	0.027*	0.062**	0.035***	0.070**	0.036***
	[0.028]	[0.013]	[0.027]	[0.012]	[0.026]	[0.013]	[0.027]	[0.016]	[0.026]	[0.012]	[0.027]	[0.012]
λ_i	-0.062***	-0.015**	-0.063***	-0.016**	-0.038*	-0.012	-0.058***	-0.011	-0.056***	-0.015**	0.377*	0.215
	[0.016]	[0.008]	[0.016]	[0.008]	[0.021]	[0.015]	[0.016]	[0.010]	[0.016]	[0.008]	[0.219]	[0.169]
$\bar{r}_i$	-0.139***	0.028	-0.139***	0.023	-0.037	0.089***	-0.132***	0.030	-0.140***	0.026	0.769	-0.206
	[0.039]	[0.020]	[0.038]	[0.019]	[0.048]	[0.020]	[0.039]	[0.021]	[0.041]	[0.019]	[0.647]	[0.223]
C	-0.037	0.025	-0.003	-0.020	0.201	0.146***	0.007	0.005**	0.115	0.156**	0.031**	0.007
	[0.026]	[0.034]	[0.037]	[0.016]	[.122]	[0.041]	[0.011]	[0.002]	[0.253]	[0.068]	[0.013]	[0.005]
$\lambda_i \times C$	0.022**	-0.007	0.016	0.011	-0.070	-0.008	-0.004	-0.001	-0.174**	-0.078	-0.012**	-0.006
	[0.011]	[0.015]	[0.028]	[0.016]	[0.050]	[0.040]	[0.004]	[0.002]	[0.071]	[0.054]	[0.006]	[0.005]
$\bar{r}_i \times C$	0.046	-0.025	0.013	0.046*	-0.316**	-0.322***	-0.009	-0.006*	0.158	-0.045	-0.026	0.006
	[0.038]	[0.046]	[0.054]	[0.025]	[0.151]	[0.042]	[0.019]	[0.003]	[0.379]	[0.094]	[0.018]	[0.006]
Base 3	✓		✓		✓		✓		✓		✓	
Base 7		✓		✓		✓		✓		✓		✓
Obs	7256	23386	7256	23386	7256	23372	7256	23386	7256	23386	7209	23064
R2	0.13	0.63	0.12	0.63	0.13	0.63	0.12	0.63	0.13	0.63	0.13	0.63

Notes. Specification is the same as column 7 in the main table. *Internal Migration* is equal 1 if respondent has moved in the last 5 year. *Local News* is equal 1 if she mainly relies on local sources of news including friends and family. *UKIP Activism* is the share of people in the LAD contacted by UKIP during the campaign. *Trade* is 5-years trade shock at the LAD level. *Immigration* is 5-years immigration shock. *Welfare spending* is level of government welfare spending in the LAD.

Correlation between λ and $\bar{r}$

	(1)	(2)	(3)	(4)	(5)
Dep. Var	λ_i	λ_i	λ_i	λ_i	λ_i
$\bar{r}_i$	-0.005	-0.084	-0.093	-0.093	-0.008
	[0.061]	[0.063]	[0.063]	[0.083]	[0.026]
r_i			0.053**	0.076**	0.005
			[0.021]	[0.035]	[0.008]
Sample years	2010-15	2010-15	2010-15	2010-15	2010-14-15
Pre election	Y	Y	Y	N	N
Controls		✓	✓	✓	✓
Wave FE	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓
Lad FE	✓	✓	✓		
Lad-Year FE					
Individual FE				✓	✓
Observations	11800	8446	8446	1528	28968
R-squared	0.09	0.15	0.15	0.70	0.71

Notes. Specifications are like columns 2 to 7 in the main table.

Ingroup Homogeneity

	(1)	(2)	(3)	(4)	(5)	(6)
	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip
$\lambda_i \times \bar{r}_i$	0.033***	0.035***	0.038***	0.035***	0.037***	0.035***
	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]
λ_i	-0.015*	-0.013	-0.026***	-0.016**	-0.018**	-0.020**
	[0.008]	[0.008]	[0.009]	[0.008]	[0.008]	[0.008]
$\bar{r}_i$	0.031*	0.037*	0.049**	0.031	0.041**	0.032*
	[0.019]	[0.019]	[0.019]	[0.019]	[0.019]	[0.019]
Com	0.046*	0.048***	-0.007	0.006	0.001	0.000
	[0.024]	[0.016]	[0.010]	[0.014]	[0.010]	[0.010]
$\lambda_i \times$Com	0.007	-0.023	0.022**	0.005	0.006	0.016
	[0.022]	[0.015]	[0.010]	[0.014]	[0.010]	[0.010]
$\bar{r}_i \times$Com	-0.102***	-0.072***	-0.039***	-0.035**	-0.043***	-0.023*
	[0.033]	[0.019]	[0.011]	[0.017]	[0.012]	[0.012]
Com	Family	Area	Race	Income	Education	Age
Obs.	23386	23386	22576	23386	23386	23386
R2	0.63	0.63	0.63	0.63	0.63	0.63

Notes. Specification is the same as column 7 in the main table.

Other Parties

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var	Ukip	Cons	Labour	Libdem	Green	Turnout
$\lambda_i \times \bar{r}_i$	0.035***	-0.031**	0.007	0.019	-0.010	-0.021
	[0.012]	[0.015]	[0.018]	[0.014]	[0.009]	[0.016]
λ_i	-0.016**	-0.008	0.012	-0.001	0.000	0.010
	[0.008]	[0.010]	[0.011]	[0.008]	[0.006]	[0.010]
$\bar{r}_i$	0.025	0.044*	-0.047*	-0.027	0.025*	0.009
	[0.019]	[0.025]	[0.028]	[0.021]	[0.015]	[0.024]
Observations	23386	23386	23386	23386	23386	23386
R-squared	0.63	0.84	0.83	0.74	0.68	0.73

Notes. Specification is the same as column 7 in the main table.

Aggregate Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip	Ukip
$\bar{\lambda}_d \times \bar{r}_d$	0.125**	0.125**	0.130**	0.124**	0.130**	0.122**	0.123**	0.113**	0.278*
	[0.054]	[0.055]	[0.057]	[0.056]	[0.057]	[0.057]	[0.055]	[0.055]	[0.160]
$\bar{r}_d$	-0.102**	-0.110**	-0.097**	-0.095**	-0.097**	-0.090**	-0.088**	-0.082*	-0.202*
	[0.044]	[0.043]	[0.045]	[0.044]	[0.045]	[0.045]	[0.043]	[0.043]	[0.119]
$\bar{\lambda}_d$	-0.055	-0.054	-0.065*	-0.059	-0.065*	-0.062	-0.060	-0.054	2.176*
	[0.035]	[0.035]	[0.039]	[0.038]	[0.039]	[0.039]	[0.037]	[0.037]	[1.150]
Demography		✓	✓	✓	✓	✓	✓	✓	✓
Economy			✓	✓	✓	✓	✓	✓	✓
Welfare				✓				✓	✓
Immigration					✓			✓	✓
Trade						✓		✓	✓
Activism							✓	✓	✓
Interacted									✓
Observations	734	734	726	722	726	726	726	722	722
R-squared	0.88	0.88	0.89	0.89	0.89	0.89	0.90	0.90	0.91

Notes. Observations are LADs in 2010 and in 2015. Dependent variable is Ukip vote share. All regressions include LAD and year fixed effects.

Conclusion

- We built a psychological theory of protest vote.
- We tested it.
- Our work is complement to existing research which investigates material motivations and cultural factors.
- Is all this cultural, or is it economic? Probably both....
- We focused on relevant (and relatively unexplored) drivers of protest vote and populism. e.g.
  - an individual's perception of her position in the society (economic, but through a psychological mechanism)
  - her social ties with local community (cultural, but psychological mechanism).