

Political ignorance and policy preferences

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Abstract:

Large proportions of the electorate can best be described as politically ignorant. If casting a competent vote requires some basic knowledge of the incumbent's identity, the workings of the political system, one's own policy preferences and the policy preferences of the main candidates, many voters cannot vote competently. Wittman (1989) suggests that, if ignorance is unbiased, overall results will be determined by informed voters as the ignorant cancel each other out. Lupia and McCubbins (1998) provides a mechanism whereby voters with little information can take cues from more informed colleagues in order to vote as if they had the requisite information. Using data from a uniquely useful dataset, the 2005 New Zealand Election Survey, I show that both mechanisms fail. Political ignorance is not unbiased: rather, it strongly predicts policy and political party preferences after correcting for the demographic correlates of ignorance. Moreover, membership in the kinds of organizations held to allow the ignorant to overcome their deficiencies fails to improve outcomes. Voter ignorance remains a very serious problem.

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I. Introduction

H.L. Mencken defined democracy as a pitiful belief in the collective wisdom of individual ignorance. While Mencken predated modern public choice literature by several decades, he did anticipate one of its major theoretical arguments: whether democracy can work well despite voter ignorance. We have convincing evidence of widespread voter ignorance (Delli Carpini and Keeter, 1996). Somin (1998) also surveys the literature. In addition to the standard findings that few voters can name their representatives, that only a bare majority knows which party controls Congress, and that about a third are complete “know-nothings”, even more shocking results include that only 38% of Americans in 1964 knew that the Soviet Union was not a NATO member. At the height of the Cold War, only two years after the Cuban Missile Crisis, most Americans weren’t aware that the Soviets were not a part of the organization founded to protect Europe and the West against the Soviets. Pervasive ignorance has characterized the electorate for rather some time.

We all know that such ignorance is rational: Anthony Downs demonstrated the logic of rational ignorance half a century ago. Traditional public choice theory has then argued that voter ignorance provides room for agency problems between voters and representatives.² More recent work has argued that democracy is robust even to high levels of voter ignorance. The law of large numbers provides a strong defense against ignorance so long as ignorance is unbiased. As Wittman (1989) shows, in a binary contest where a large proportion of the electorate effectively is flipping coins to make its decision, it’s the informed voters that determine the outcome. Of course, that result depends critically on that ignorance imparts no bias to choice.

Further work by Lupia and McCubbins (1998) shows that voters can behave as though they have complete knowledge through the use of shortcuts. So, for example, if you’re a political know-nothing but you’re a member of a gun club, somebody there will tell you to vote for the Republicans if you care a lot about firearms ownership and curtailment of

² See, for example, Grossman and Helpman’s 1996 model in which lobbyists have influence only because of uninformed voters.

Second Amendment rights. On the other side, if you're a political know-nothing but you're a member of a union, somebody there will tell you to vote for the Democrat if you care about maintaining or enhancing union bargaining power to keep your wages up. Wittman (1989, 1995) argues that simply having a more politically knowledgeable friend with similar tastes may suffice for informed choice. Lupia (1994) shows that otherwise uninformed voters who knew only Ralph Nader's position on a complicated California insurance referendum voted similarly to informed voters of similar demographic characteristics. Lupia and McCubbins (1998) provide a model in which uninformed voters can choose competently when directed by a third party that either is trusted and knowledgeable or is subject to penalties for lying. Membership in organizations such as unions, professional associations, environmental groups, and churches all then can provide the otherwise-uninformed voter with useful cues and cue-givers to aid in voting decisions: group membership should attenuate the effect of ignorance.

The New Zealand Election Survey provides very useful data here. In addition to a wide variety of demographic information and data on policy and party preferences, the survey provides both factual questions about the New Zealand voting system that can benchmark political ignorance and details on membership in associations that we might expect to attenuate the effects of ignorance on party and policy choices. I know of no other dataset that combines detailed demographic data with policy and party preferences, measures of political ignorance, and membership in relevant social groups. Section II describes the dataset and constructs the ignorance measures. Section III provides our hypotheses, describes our econometric approach to testing, and discusses the results.

II. The New Zealand Election Survey

The New Zealand Election Study began surveys of the New Zealand electorate in 1990. The 2005 survey provides data on about 3700 potential voters. The survey is broadly representative of the New Zealand population, but with oversampling of Maori

Table 1: Summary statistics on NZES respondents and the NZ population³

	NZES	NZ Population
% Male	44.5 %	48%
Age	52	45
New Zealand born	85%	77%
European ethnicity	70%	79%
Maori ethnicity	32%	15%
Pacific ethnicity	2.3%	6.9%
Asian ethnicity	2.5%	9.2%
Personal income	\$34,300	\$30,500
Household income	\$62,100	\$65,500
Union membership	17.4%	17.3%
Voting intentions (among voters):		
Labour	43%	41%
National	30%	39%
Green	5.5%	5.3%
NZ First	6.7%	5.7%
ACT	1.5%	1.5%
United Future	2.7%	2.7%
Maori Party	8.9%	2%
Progressive	1%	1.2%
Other	0.9%	1.5%
Didn't vote	4.8%	19.1%

electorates.⁴ Table 1, above, provides summary statistics on survey respondents and the New Zealand population.

II.1 Ignorance measures

The NZES provides five broad mechanisms for assessing a respondent's level of political ignorance. Respondents are asked to place parties on a left-right index, to answer questions about the operation of the electoral system, and to identify one's Member of Parliament, his party, and the composition of the previous government.

³ Gender, age and ethnicity data taken from the 2006 New Zealand Census and include only respondents over age 20; as the NZES excludes respondents under age 18, including minors in population data would provide a skewed picture of NZES representativeness. Respondents to both surveys can indicate multiple ethnicities, so the sum of all ethnicities can exceed 100%. Census respondents indicating "New Zealander" were added to those indicating European ethnicity. Income data from the 2005 June quarter Household Income Survey. Population data on voting comes from realized outcomes in the 2005 general election.

⁴ I include Maori ethnicity as a control variable in later specifications. The oversampling will not induce bias in my results.

As New Zealand operates under a Mixed Member Proportional electoral system, there are many political parties from which to choose. I consequently only scored respondents based on their ability to place National, United Future, and Labour successfully on a left-right index. National in 2005 was a clearly conservative party, United Future a classically centrist or centre-right party, and Labour a traditional labour party. Respondents then could score a maximum of three on the ideology ignorance variable: inability to place National relative to Labour, National relative to United Future, and United Future relative to Labour each add one to the respondent's constructed ideology ignorance score. Scores ranged from 0 to 3. 60% of the sample could correctly place National, United Future, and Labour in correct order.

I then constructed a measure of the respondent's ignorance about the operation of the MMP electoral system. Here respondents' scores increased with incorrect answers to factual questions about the operation of the system and with inconsistent answers about respondent preferences. On factual questions, respondents scored a +1 to their MMP ignorance measure for: indicating that the electorate vote is more important in determining the composition of Parliament than the party list vote; being unable correctly to identify the conditions for a party's entry into Parliament as being either winning 5% of the vote or winning at least one electorate; and, for indicating the party with the most votes is more likely to win the most seats under First Past the Post than under MMP. On the consistency questions, respondents scored a +1 for indicating that they preferred that there be lots of parties but that they also preferred FPTP to MMP, for indicating that they preferred that there only be two big parties but that they also preferred MMP to FPTP, for indicating that the current number of parties (8) was "about right" but still preferring FPTP to MMP, and for indicating a preference for single-party government combined with a preference for MMP over FPTP (or vice-versa). Scores on this measure ranged from 0 to 6. A little over half of respondents knew each of that the party vote is the most important, that winning either 5% of the party vote or an electorate is sufficient, and that the party with the most votes is more likely to get the most seats under MMP.

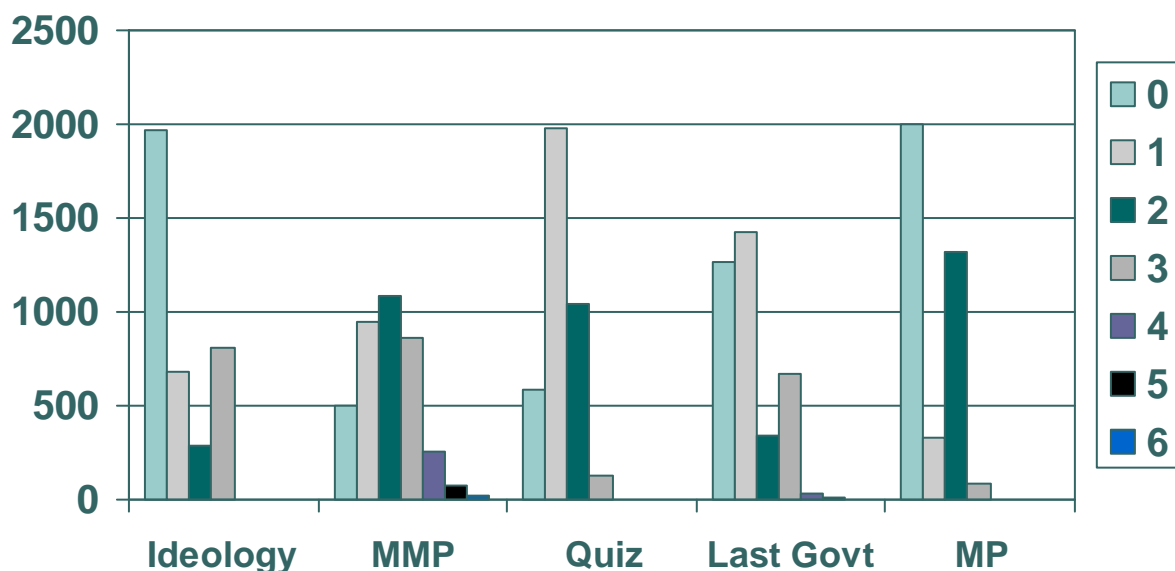
The survey also provides three quiz questions: incorrectly identifying the term of Parliament as being 4 years, failing to recognize that enrolling to vote is compulsory, and not knowing that permanent residents are allowed the vote each scored the respondent a

+1 on his quiz ignorance measure; scores ranged again from zero to 3. 83% of respondents correctly identified the term of Parliament, but only 28% knew that some non-citizens have the right to vote.

Respondents were asked to identify the parties that formed the government after the 2002 election. In some cases, membership was ambiguous: the Green Party was not a part of the governing coalition but abstained on matters of confidence. Respondents earned a +1 to their government ignorance measure by indicating either an inability to recall any of the parties in government, failing to indicate each of Labour and the Progressive Party to be part of the coalition, or by incorrectly identifying National, New Zealand First, Act, or the Maori Party as being part of the government. Scores here ranged from 0 to 5. While 83% of respondents knew that Labour was part of the government, only 39% identified the Labour-Progressive coalition. 84 respondents identified National, the main opposition party, as being part of the government.

Finally, respondents were scored on their ability successfully to identify the name and party affiliation of their Member of Parliament. Incorrectly identifying the party affiliation of a respondent-named List-MP also scored a +1. MP ignorance scores ranged from 0 to 3. 56% of respondents could name their Member of Parliament and that MP's party.

Figure 1: Respondent scores on each of the ignorance measures.



I aggregated respondent scores by taking a simple sum across all measures, by summing the Z-scores of respondent deviations from average scores across all measures, and by taking the principal component factor across the five measures. Individual scores by each aggregation mechanism correlated very strongly (>0.99 in all cases); I retained the principal component factor as my measure of ignorance for ease of interpretation: by construction, the principal component is of mean zero and standard deviation 1. As expected, robustness checks using the different measures did not reveal any sensitivity to the chosen aggregation mechanism. The factor analysis is available in the appendix as Appendix Table 1. Just as all reasonable measures of intelligence load on a single factor, so too for reasonable measures of ignorance.

Prior and Lupia (2008) criticize the use of this type of political knowledge measure. Survey respondents have little incentive to perform well on these “pop quizzes”; by contrast, in the lead-up to an election, citizens presumably put great time and effort into thoughtful consideration of for whom to vote. Prior and Lupia consequently argue that demonstrations of voter incompetence in answering survey questions reveal little about actual voter competence at the ballot box. Survey questions about the workings of the political system require respondents to access what Prior and Lupia call “declarative memory”; they show that appropriate incentives can induce better respondent performance on such questions. I here make use of a survey that simultaneously asks respondents questions addressing competence and questions addressing party and policy preferences: while competence questions may hinge on declarative memory, Prior and Lupia do not suggest similarly for party and policy preferences. We can think of the difference as being analogous to asking a respondent what their home sports team’s away average was in 1968 and asking for whom the respondent cheers: the latter question does not key to declarative memory. If Prior and Lupia’s contention is correct, my measure of voter ignorance should have little predictive power in explaining party and policy preference. If it does have predictive power, then measures of voter ignorance are very useful regardless of whether respondents can improve on such scales through use of appropriate incentives.

II.2: *Economic knowledge*

I next aggregated responses to questions relating to economic policy. The NZES solicits many policy preferences, a subset of which address matters with which most economists would agree: broadly constituted, I call these “economic thinking”. While the questions provide a mix of positive and normative statements, surveys of economists suggest economists’ responses to these questions would be broadly unidirectional.⁵ Regardless of their equity preferences, few economists would disagree that high income taxes make people less willing to work hard, though we might disagree about the magnitude of the elasticity; 26% of survey respondents disagreed with the statement and a further 5% disagreed strongly. Similarly very few economists would support the controlling of wages or prices by law as a solution to New Zealand’s economic problems; 21% of survey respondents agreed or strongly agreed with wage controls and 35% agreed with price controls. The following policy variables were included in constructing an economic policy index:

- There should be a law to further reduce pay differences between women and men⁶
- High income tax makes people less willing to work hard⁷
- The government should control wages by law
- The government should control prices by law⁸
- The government should introduce import controls⁹

⁵ Contrast statements here with the economic policy preferences later examined. While it’s reasonable to believe most economists oppose wage and price controls, preferences over taxation and redistribution, for example, are far less obviously unidirectional; the latter consequently is one of the preferences I seek to explain.

⁶ 83% of labour economists disagree with legislation mandating equal pay for equal work, with 89% of labour economists believing such legislation would not increase labour market efficiency and 56% believing that such measures would not increase labour market equity (Whaples, 1996).

⁷ 91% of labour economists agree that leisure is a normal good for most workers. However, most labour economists also agree that most adult men are on the vertical section of their labour supply curve while most adult women are not (Whaples, 1996); taken as a whole, this suggests a reasonable labour elasticity to taxes. R. M. Alston et al., 1992, find only 55% of economists agree or strongly agree that lower marginal income taxes reduce leisure and increase work effort, but the question here asks about “high” tax rates; I’m here assuming that few economists would disagree that a return to the kinds of top marginal tax rates seen in the 1970s would have a substantial effect.

⁸ 74% of economists disagree that wage and price controls are useful in controlling inflation (Alston, Kearn and Vaughn, 1992).

⁹ 92% of economists agreed or partially agreed that tariffs and import quotas generally reduce welfare (Fuller and Geide-Stevenson, 2003).

- Immigration is good for the New Zealand economy¹⁰
- Minimum wages reduce the creation of new jobs¹¹
- The government should provide a job for everyone who wants one¹²

I constructed two different aggregate measures of “economic thinking”. The first added up the number of instances of responses that agree with economists and subtracts the number of instances of disagreement, leaving neutral responses and “don’t know” as neutral. The second scored each measure from -2 to +2 depending on the strength of agreement or disagreement, then used a principal-component factor analysis of the eight items to generate a single economics index of mean zero and standard deviation 1. The two measures correlate at 0.77. The second was retained for ease of interpretation, though no major results change in using the first measure. The principal-component analysis is included as Appendix Table 4.¹³

III. Causes and consequences of ignorance

The New Zealand Election Survey provides a wide variety of demographic variables that might be predicted to correlate with political ignorance. We would expect that respondents indicating an interest in politics and seeking out political news will be less ignorant than others. Similarly, those with more education should be expected to be less ignorant. Consistent with previous literature, we expect males to have more political knowledge than females and that ethnicity, income and age may matter. Members of interest groups and churches may be less ignorant as they may be more likely to learn

¹⁰ 96% of labour economists agree that “the overall gains to American society from immigration exceed the losses.” (Whaples, 1996)

¹¹ 87% of labour economists agree that minimum wages increase unemployment among the young and unskilled (Whaples, 1996).

¹² None of the surveys of economists I have found have asked this question directly; however, most surveys show broad support for shifts towards negative income taxes or expansion of EITC as being the most effective ways of helping the poor.

¹³ The principal component analysis revealed that the questions loaded onto two factors. As a robustness check, I dropped the two questions that loaded primarily onto the second factor (whether high income taxes affect labour supply and whether immigration helps the economy), leaving a measure that loaded onto a single factor, and checked results against the alternative “economic thinking” index. The two measures correlate at 0.98 and results did not change with the alternative specification of “economic thinking”.

things about the political system from colleagues. Having internet access decreases the cost of acquiring political information and so should correlate negatively with ignorance.

Of course, a host of other available variables might well affect ignorance. I consequently employed a general-to-specific reduction of an OLS specification to determine the variables affecting political ignorance: $Ignorance = \alpha + \beta X + \omega G + \varepsilon$ where the X vector denotes variables suggested by theory and the G vector denotes variables subject to elimination in the general-to-specific reduction.

Full results of the final specification are provided in the Appendix, along with summary statistics on included variables. The more interesting results are presented in Table 2, below. As the dependent variable is the principal component of the ignorance measures, the coefficients tell us the proportion of a standard deviation move in the dependent variable correlated with a unit move in the independent variable. So, having internet access reduces ignorance by 0.07 standard deviations. Being male reduces ignorance by 0.18 standard deviations. Having a university education reduces ignorance by 0.37 standard deviations, as does being employed in farming. As compared to political centrists, those with a left wing ideology are far more politically informed; holding a right-wing ideology had no significant effect. Those unable to state a political ideology are more than a half a standard deviation more ignorant than others: the single largest effect in absolute terms.¹⁴

Membership in many organizations affects ignorance directly. Members of political interest groups, churches and community service groups are less ignorant than others, though the effects often depend on active or very active membership. All levels of activity, from basic membership through very active membership, were included in the initial specification; the table below includes only those variables that survived the

¹⁴ Inability to state one's political ideology may well be a measure that ought to have been included in the principal component analysis establishing the ignorance variable. However, I wish later to use ignorance to explain party choice. If a Green Party supporter identifies with neither the left nor the right but rather along a second environmentalist dimension, or if a Maori Party supporter identifies with a third ethnically-based dimension, we're constrained against examining that possibility if this measure is included as part of the overall ignorance measure.

Table 2: Correlates of ignorance

	Ignorance
Lack of interest in politics (1=very interested; 4= not at all interested)	0.082 [3.69]**
Seek out news about politics? (0=no, 1=yes)	-0.09 [2.42]*
Pay no attention to political news (0=no, 1=yes)	0.198 [3.68]**
Follow political news on internet (1=not at all, 4=often follow)	-0.068 [3.54]**
Follow political news in newspaper (1=not at all, 4=often follow)	-0.08 [5.12]**
Very active member of church (0=no, 1=yes)	-0.117 [3.14]**
Age (years)	-0.035 [6.26]**
gender of respondent (0=female, 1=male)	-0.183 [6.23]**
Some tertiary education (0=no, 1=yes; less than secondary omitted)	-0.145 [4.38]**
University educated (0=no, 1=yes; less than secondary omitted)	-0.369 [8.45]**
managerial (0=no, 1=yes, manual labour omitted)	-0.169 [2.70]**
Tech (0=no, 1=yes, manual labour omitted)	-0.255 [4.16]**
Clerical (0=no, 1=yes, manual labour omitted)	-0.262 [4.16]**
Farming (0=no, 1=yes, manual labour omitted)	-0.377 [4.66]**
Parents expressed political preference (0=no, 1=yes)	-0.153 [5.12]**
Maori ethnicity (0=no, 1=yes)	0.374 [9.31]**
receives domestic purposes benefit (0=no, 1=yes)	0.149 [2.17]*
Household income <\$15,900 (0=no, 1=yes)	0.125 [2.11]*
Household income >\$120,000 (0=no, 1=yes)	-0.177 [3.66]**
Don't know household income (0=no, 1=yes)	0.214 [4.96]**
Left wing (0=no, 1=yes)	-0.302 [8.67]**
Don't know own ideology (0=no, 1=yes)	0.588 [15.21]**
Country's financial outlook better for next year (0=no, 1=yes)	0.132 [3.39]**
Previous government performance good (0=no, 1=yes)	0.09 [2.89]**

Dependent variable: Principal component of ignorance measures. Adjusted R-squared: 0.47, N=3217
 Absolute value of t-Statistics in parentheses; *=5%, **=1% threshold. Full specification in appendix.
 Note that standard errors have not been corrected for the general-to-specific reduction; however, each variable here reported was significant at the 5% level in the initial specification before reduction. Results of initial specification available on request.

general-to-specific reduction and that were statistically significant at the five percent level in the initial specification.

III.1: Effects of ignorance: policy preference

If ignorance is unbiased, then it should not have predictive power in explaining preferences after controlling for the demographic variables that explain ignorance itself. I brought ignorance over onto the right hand side of the equation for testing:

$$\mathbf{Policy} = \alpha + \theta \mathbf{Ignorance} + \beta \mathbf{X} + \omega \mathbf{G} + \varepsilon$$

$$H_0 : \text{Ignorance is unbiased} : \theta = 0$$

where **Policy** is a vector of many policy questions and other variables are as earlier described. If ignorance is unbiased, then $\theta = 0$. I began by testing the effects of ignorance on economic thinking, with results presented in Table 3, below. All of the control variables used in the final ignorance specification here again are used, but only the interesting ones are reported.¹⁵

Political ignorance is among the strongest negative predictors of agreement with economists on matters of positive economics. Recall that our economic index is constructed with mean zero and standard deviation one. A standard deviation increase in political ignorance results in a 0.23 standard deviation reduction in the index of economic thinking. Having high income, a university education, and being male all strongly influence economic thinking.

Caplan (2001, 2007) examines differences between economists and the public on matters of positive economics, finding that being male, well educated, and having positive income growth all correlate with thinking like an economist. Results here are broadly consistent with his findings, though our questions address a mix of positive and normative considerations. Caplan ascribes some of his results on expected income growth to general optimism about long-run economic trends. Caplan's survey data comes from 1996 – in the lead-up to a nice run of economic growth. Here, those with a

¹⁵ Full results are, of course, available on request.

Table 3: Economic Thinking

	Economic Thinking (t-statistic)
Political ignorance measure (Mean zero, sd 1; higher number = more ignorant)	-0.229 [10.66]**
Have internet (0=no, 1=yes)	0.157 [3.76]**
gender of respondent (0=female, 1=male)	0.254 [7.15]**
Some tertiary education (0=no, 1=yes; less than secondary omitted)	0.099 [2.49]*
University educated (0=no, 1=yes; less than secondary omitted)	0.286 [5.47]**
Home owner (0=no, 1=yes)	0.164 [3.73]**
European ethnicity (0=no, 1=yes)	0.141 [2.76]**
Maori ethnicity (0=no, 1=yes)	-0.308 [6.28]**
High income (0=no; 1= income > \$120,000)	0.391 [6.83]**
Don't know income (0=no, 1=yes)	0.141 [2.66]**
Left wing ideology (0=no, 1=yes)	-0.202 [4.82]**
Don't know own ideology (0=no, 1=yes)	-0.046 [0.95]
Good household financial situation vs last year (1= better ; 0= equal or worse)	0.101 [2.58]**
Good state of the economy vs last year (1=better, 0= equal or worse)	-0.068 [1.74]
Better expectation for national economy next year (1= better ; 0= equal or worse)	-0.087 [1.87]
Dependent variable: principal component economic index. 2984 observations, Adjusted R ² = 0.3.	

more pessimistic outlook about the general economy are more likely to think like an economist: it may be that results here and in Caplan's work suggest that those more likely to think like economists are those better able to forecast broad economic trends.

I then went on to test the effects of ignorance on a broader set of policy variables. The general regression equation is as described above, except that "economic thinking" is added as an element of **X**. Maintaining the exact same set of covariates in both the ignorance and the policy and party specifications introduces an identification issue: as the

latter specifications effectively are regressing on the residual of ignorance from the first specification, the error structure from the first specification is brought into the latter specifications.¹⁶ To address this issue, I've run versions of the latter specifications first with the exact same set of covariates as in the ignorance specification, then with the addition of the "economic thinking" index, then with removal of some elements of **G**, then with the addition of all of the elements of **G** dropped in the initial general-to-specific specification reduction. The coefficient on the ignorance variable doesn't move substantially except with the addition of the "economic thinking" variable, which typically reduces the magnitude and significance of the ignorance variable. Simply including the economic thinking variable does not solve the identification issue given that ignorance also predicts economic thinking; however, robustness of results on ignorance given various permutations of **G** lends confidence to my overall results.

As ignorance negatively predicts economic thinking,¹⁷ the economic thinking variable picks up some of the effects of ignorance, attenuating my results. For example, ignorance strongly predicts agreeing that "big business has too much power" when economic thinking is not included but not at all when economic thinking is included. Attitudes toward taxation and redistribution behave similarly. To the extent that my ignorance variable may be picking up individual characteristics omitted from the survey, such as elements of worldview not incorporated into the ideology measure, inclusion of the "economic thinking" variable may assist in mopping up some of the effects of the ignorance variable that may be due to things other than core ignorance.

Results for individual policies are presented in Tables 4 and 5, below. Each row represents a separate specification, with independent variables listed as columns. In each case, all variables used to explain ignorance from the final specification above are used in conjunction with ignorance and economic thinking as independent variables. Full regression results from each specification are available on request. While the dependent variable is categorical, OLS regression was conducted in each case for ease of coefficient

¹⁶ I thank Peter Phillips for pointing this out and Les Oxley and Bob Reed for explaining the point to me.

¹⁷ The raw correlation in the data is -0.39.

interpretation. Ordered logit specifications also were conducted: regressing predicted dependent variables from OLS on the predicted dependent variables from ordered logit specifications typically yielded very high r-squared values (above 0.98) and eliciting marginal effects from dozens of ordered logit specifications proved computationally intensive, so OLS was retained. In all cases, “don’t know” answers were dropped from the analysis as simply assigning them to the centre of the range would have biased results where “don’t know” answers correlate with ignorance.¹⁸

In many of the tested policies, ignorance has predictive power independently of the variables that predict ignorance, despite that our procedure necessarily induces strong multicollinearity. I checked joint significance of the ignorance variable across all specifications: a chi-squared test performed after running the set of equations as a system of seemingly-unrelated regressions strongly rejects that the coefficient on ignorance is equal to zero across the nine specifications.¹⁹

Turning to preferences over economic policies, we find in Table 5 (below) that ignorance affects preferences over economic policy even after controlling for economic thinking.²⁰ The politically ignorant are more likely to support tax reductions (despite earlier being shown to favour increased spending in most areas), less likely to support government ownership or regulation of Kiwibank, Landcorp and electricity generation, and more likely to agree that welfare benefits make people dependent and that the unemployed should be made to work for their benefits.

¹⁸ Future work will examine the effect of ignorance in predicting “don’t know” answers more generally.

¹⁹ $X^2(9) = 37.45$; $p = 0.0000$. Coefficients reported are from separate OLS specifications; the SUREG procedure allowed for testing of joint significance across all specifications. There are no substantial differences in coefficients between the separate OLS specifications and the SUREG specification: the effect of ignorance on preferences over genetically-modified foods becomes significant in the SUREG specification and doubles in magnitude; other coefficients are not greatly affected. I retained results from OLS specifications because SUREG requires the same observations across all specifications, restricting analysis to responses providing non-“don’t know” answers across the set of all policy questions. Where the number of observations varies from 2600 to 2950 across separate specifications, the SUREG procedure drops N to 2365 for all specifications.

²⁰ I again tested joint significance of the ignorance variable using the seemingly-unrelated regression technique. Results under SUREG were very similar to those under OLS. The X^2 test again strongly rejects that the joint coefficient estimate is zero ($X^2(10)=26.57$, $p=0.0030$).

Table 4: Ignorance and policy preference

Policy variable	Policy Mean, Std. Dev.	Ignorance	Economic Thinking	Very active church member	Male	University degree	High income	Left wing	Adj. R ²
Protect environment even if lowers income (1=yes, 7=no)	3.40 (1.46)	0.04 (0.98)	0.11 (3.49)**	0.01 (0.15)	0.11 (1.87)	-0.41 (4.65)**	-0.05 (0.56)	-0.72 (10.12)**	0.11
GM foods relatively safe (1=strongly agree; 5=st. disagree)	2.93 (1.09)	0.05 (1.83)	-0.13 (5.11)**	0.13 (2.10)*	-0.25 (5.22)**	0.05 (0.73)	-0.25 (3.23)**	0.27 (4.71)**	0.12
Tax and redistribution (1=more redist; 7=less)	4.14 (1.60)	-0.00 (0.03)	0.32 (9.15)**	-0.28 (3.37)**	-0.17 (2.52)*	-0.11 (1.16)	0.38 (3.65)**	-0.81 (10.38)**	0.20
Assist low income families (1=much more; 5=much less)	2.48 (0.99)	-0.05 (2.07)*	0.16 (8.65)**	-0.21 (4.65)**	0.03 (0.95)	0.09 (1.61)	0.00 (0.02)	-0.22 (5.22)**	0.29
Environmental spending (1=much more; 5=much less)	2.52 (0.77)	-0.03 (1.50)	0.08 (4.81)**	0.00 (0.12)	0.03 (1.09)	-0.16 (3.41)**	0.01 (0.13)	-0.26 (7.16)**	0.11
Health spending (1=much more; 5=much less)	1.86 (0.73)	-0.06 (3.10)**	0.12 (7.70)**	-0.01 (0.21)	0.16 (5.30)**	0.13 (3.00)**	0.14 (2.97)**	-0.05 (1.33)	0.10
Defence spending (1=much more; 5=much less)	2.73 (0.97)	-0.01 (0.23)	0.01 (0.57)	0.02 (0.33)	-0.06 (1.50)	0.30 (5.09)**	0.09 (1.48)	0.47 (10.16)**	0.12
Death penalty reinstatement (1=strongly agree; 5 = st. disagree)	2.70 (1.40)	-0.18 (5.32)**	0.25 (8.81)**	0.40 (5.83)**	-0.25 (4.58)**	0.67 (8.32)**	0.00 (0.02)	0.36 (5.65)**	0.20
Homosexuality is wrong (1=strongly agree, 5 = st. disagree)	3.34 (1.31)	-0.03 (0.86)	0.19 (7.62)**	-0.86 (14.21)**	-0.43 (8.86)**	0.27 (3.79)**	0.14 (1.79)	0.47 (8.26)**	0.25
Remove Treaty references (1=strongly agree, 5 = st. disagree)	2.93 (1.46)	-0.05 (1.80)	-0.07 (2.72)**	0.22 (3.59)**	-0.19 (4.02)**	0.43 (6.11)**	0.06 (0.75)	0.58 (10.24)**	0.44

Dependent variable listed in first column; each row presents a separate specification. Second column provides summary statistics on the dependent variable; subsequent columns provide coefficients on independent variables with t-statistics listed in parentheses. * and ** denote 5% and 1% significance levels, respectively.

Table 5: Ignorance and economic policy preference

Dependent policy variable	Policy Mean, Std Dev.	Ignorance	Economic Thinking	Male	University degree	Maori ethnicity	High income	Left wing	Adj.R ²
Reduce taxes in general (1 = strongly support; 5 = st. oppose)	2.13 (0.97)	-0.06 (2.38)*	0.10 (4.81)**	0.09 (2.31)*	0.25 (4.43)**	-0.05 (0.88)	-0.09 (1.38)	0.54 (11.86)**	0.17
Govt ownership Kiwibank (1 = fully own; 4 = not own or regulate)	1.98 (1.11)	0.10 (3.37)*	0.18 (7.51)**	-0.04 (0.78)	0.08 (1.08)	-0.07 (0.99)	0.31 (4.07)**	-0.25 (4.56)**	0.10
Govt ownership Landcorp (1 = fully own; 4 = not own or reg)	2.04 (1.05)	0.12 (3.80)**	0.15 (6.09)**	-0.11 (2.30)*	0.00 (0.02)	-0.07 (0.98)	0.11 (1.42)	-0.26 (4.62)**	0.06
Govt ownership electricity generation (1 = fully own; 4 = not own or reg)	1.95 (0.98)	0.06 (2.36)*	0.16 (7.45)**	-0.17 (3.93)**	0.06 (1.03)	0.11 (1.83)	0.07 (1.10)	-0.12 (2.48)*	0.05
Govt ownership Television NZ (1 = fully own; 4 = not own or reg)	2.38 (1.14)	0.04 (1.20)	0.18 (7.41)**	-0.06 (1.27)	-0.09 (1.30)	-0.11 (1.66)	0.09 (1.19)	-0.18 (3.19)**	0.09
Unemployed should work for benefit (1 = strongly support; 5 = st. oppose)	2.18 (1.01)	-0.09 (3.47)**	0.07 (3.53)**	0.10 (2.55)*	0.25 (4.25)**	0.17 (3.04)**	0.17 (0.26)	0.40 (8.48)**	0.14
Welfare benefits make people dependent (1 = strongly support; 5 = st. oppose)	2.41 (1.17)	-0.09 (3.29)**	0.09 (3.61)**	-0.07 (1.56)	0.28 (4.06)**	0.18 (2.83)**	-0.17 (2.27)*	0.53 (9.81)**	0.16
Trade unions protect workers (1 = strongly support; 5 = st. oppose)	2.27 (0.99)	-0.00 (0.12)	0.15 (7.66)**	-0.04 (0.97)	0.02 (0.29)	-0.16 (3.05)**	0.16 (2.56)*	-0.29 (6.55)**	0.20
Big business has too much power (1 = strongly support; 5 = st. oppose)	2.52 (1.03)	-0.00 (0.18)	0.31 (15.55)**	-0.09 (2.37)*	0.05 (0.91)*	-0.24 (4.37)**	0.31 (4.94)**	-0.41 (8.86)**	0.25
Trade unions have too much power (1 = strongly support; 5 = st. oppose)	3.13 (0.97)	-0.02 (0.88)	0.01 (0.31)	-0.02 (0.44)	0.14 (2.33)*	0.05 (0.89)	-0.16 (2.51)*	0.39 (8.48)**	0.11

Dependent variable listed in first column; each row presents a separate specification. Second column provides summary statistics on the dependent variable; subsequent columns provide coefficients on independent variables with t-statistics listed in parentheses. * and ** denote 5% and 1% significance levels, respectively.

Results also prove economically significant in many cases. Recall that our ignorance variable is mean zero, standard deviation one by construction. Consequently, a standard deviation increase in ignorance correlates with a 0.05 standard deviation increase in support for assistance to low-income families, a 0.06 standard deviation increase in support for health spending, and a 0.18 standard deviation increase in support for the death penalty. While these effects aren't huge in absolute terms, they are often comparatively large. Being a very active church member reduces support for the death penalty by only about twice as much as a standard deviation decrease in ignorance. The distance between the maximum and minimum ignorance scores is 4.95. Consequently, a rough guide to the maximal effects of ignorance can be found by multiplying the ignorance coefficient by five. This effect is generally comparable to the effect of moving from the lowest level of education to having a university degree. Table 6, below, presents comparisons between the effects of the maximal increase in education (from less than secondary school to gaining a university degree), as compared to the maximal reduction in ignorance in cases where both coefficients are significant at the ten percent level.

Table 6: Ignorance versus education

Policy variable	Ignorance (max to min)	University degree
Death penalty reinstatement	0.89	0.75
Remove Treaty references	0.25	0.40
Reduce taxes in general	0.30	0.24
Govt ownership Kiwibank	-0.50	0.21
Govt ownership electricity generation	-0.30	0.18
Unemployed should work for benefit	0.42	0.19
Welfare benefits make people dependent	0.46	0.33

Coefficients on university degree here differ from those in the previous tables. The prior specifications omitted both secondary and less than secondary schooling; we here compare against less than secondary schooling to provide the maximal effect for a tertiary degree.

In most cases, the effect of ignorance reduction runs in the same direction as gaining a University degree. However, a reduction in ignorance correlates with reduced skepticism of government ownership of strategic industries while gaining a university degree has the opposite effect. The effect of reductions in ignorance often greatly outweighs the effect

of gaining a university degree when both are statistically significant. This suggests that ignorance is of real world importance.

III.2: Effects of Ignorance: Party Preference

Political ignorance correlates reasonably strongly with policy preferences. As demonstrated in Table 7, below, it also correlates with voting behavior and party preference. Each column presents the important results from separate probit specifications; marginal effects reported. Except where noted, the standard set of control variables was used, but only the interesting results are reported.²¹ The politically ignorant are somewhat less likely to vote, with a standard deviation increase in ignorance reducing the probability of voting by 1.5%. While rational instrumental agents should not vote, those with better understanding of economics are here no less likely to vote than are others. As many economists seem determined to defy their models' predictions and vote regardless, I don't take this as undermining the face validity of my measure of "economic thinking".

In the party support specifications, I restricted the sample to those reporting having voted. When they get to the polls, the ignorant are significantly more likely to support the Labour Party (4% increase in predicted probability for a standard deviation increase in ignorance) and significantly less likely to support the Green party (1% decrease in predicted probability) and United Future (0.5% decrease in predicted probability). Understanding economics strongly predicted supporting National in 2005, which comes as little surprise: the National Party leader was former Governor of the Reserve Bank of New Zealand. A standard deviation increase in our "economic thinking" index correlates with a 5.7% increased probability of voting National, a 1.5% decreased probability of

²¹ The robustness checks described earlier – modifying the set of **G** control variables -- also were here conducted. The only substantial difference was that ignorance becomes significant in predicting support for New Zealand First when the "kitchen sink" set of initial variables are used as covariates. In that specification, a standard deviation increase in ignorance correlates with a 1% increase in the probability of voting for New Zealand First. I also ran specifications adding all policy preferences into the party choice regressions. In those specifications, ignorance more strongly predicts voting Labour (0.05, $z=3.45$) and more weakly predicts not supporting United Future (-0.003, $z=2.78$) or the Green Party (-0.006, $z=2.85$).

Table 7: Ignorance and voting behavior

	Not Voting	Labour	National	Act
Ignorance (Mean zero, standard deviation 1)	0.015 [5.56]**	0.039 [2.71]**	0.007 [0.65]	-0.001 [0.67]
Economics index (Mean zero, standard deviation 1)	0.002 [0.62]	-0.008 [0.63]	0.057 [6.02]**	-0.001 [0.65]
Have internet (0=no, 1=yes)	-0.023 [3.65]**	-0.021 [0.78]	0.035 [1.68]	0.004 [1.98]*
Very active member of church (0=no, 1=yes)	-0.003 [0.44]	-0.025 [0.85]	-0.079 [4.21]**	-0.002 [1.04]
gender of respondent (0=female, 1=male)	-0.003 [0.70]	-0.051 [2.19]*	-0.036 [1.99]*	0.001 [0.32]
University educated (0=no, 1=yes; less than secondary omitted)	0.008 [0.93]	-0.019 [0.57]	-0.009 [0.35]	-0.003 [1.83]
Currently student (0=no, 1=yes)	-0.009 [1.36]	-0.049 [1.06]	0.01 [0.22]	0.003 [0.45]
Farming (0=no, 1=yes, manual labour omitted)	0.027 [1.71]	-0.237 [3.70]**	0.151 [2.42]*	0.014 [1.41]
European ethnicity (0=no, 1=yes)	-0.001 [0.19]	-0.038 [1.13]	0.076 [2.58]**	0.003 [0.99]
Maori ethnicity (0=no, 1=yes)	0.001 [0.21]	0.017 [0.54]	-0.215 [9.42]**	-0.002 [0.93]
Asian ethnicity (0=no, 1=yes)	0.014 [0.90]	-0.069 [0.95]	0.269 [3.67]**	0.028 [2.06]*
Receives NZ Superannuation (0=no, 1=yes)	-0.011 [1.58]	-0.046 [1.19]	-0.03 [1.02]	0.007 [1.71]
Receives family assistance (0=no, 1=yes)	0.011 [1.39]	0.02 [0.49]	-0.064 [1.87]	-0.003 [0.74]
Household income >\$120,000 (0=no, 1=yes)	0.009 [1.02]	-0.051 [1.34]	0.039 [1.39]	0.005 [1.60]
Divorced (0=no, 1=yes)	-0.011 [1.79]	-0.088 [2.54]*	-0.039 [1.28]	0.001 [0.28]
Left wing (0=no, 1=yes)	-0.008 [1.36]	0.253 [9.58]**	-0.237 [11.92]**	-0.006 [2.28]*
Don't know own ideology (0=no, 1=yes)	-0.007 [1.55]	0.104 [3.27]**	-0.064 [2.89]**	0 [0.16]
Good household financial situation vs last year (1= better ; 0= equal or worse)	-0.001 [0.23]	-0.005 [0.21]	-0.023 [1.16]	0.006 [2.36]*
Good state of the economy vs last year (1=better, 0= equal or worse)	-0.002 [0.40]	0.101 [4.07]**	-0.052 [2.72]**	-0.003 [1.73]
Expect better national economy next year (1= better ; 0= equal or worse)	-0.008 [1.49]	0.083 [2.86]**	-0.062 [2.46]*	-0.003 [0.97]
Don't know previous govt performance (0=no, 1=yes)	0.015 [1.30]	0.344 [5.65]**	-0.122 [4.49]**	-0.002 [0.57]
Previous government performance good (0=no, 1=yes)	0.006 [1.17]	0.443 [17.98]**	-0.31 [15.35]**	-0.003 [1.45]
Pseudo R-squared	0.25	0.24	0.44	0.23

Probit specifications, marginal effects reported.

Table 7(continued): Ignorance and voting behavior

	NZ First	UF	Green	Maori
Ignorance (Mean zero, standard deviation 1)	0.006 [1.21]	-0.005 [3.27]**	-0.013 [3.15]**	-0.002 [0.69]
Economics index (Mean zero, standard deviation 1)	-0.015 [3.17]**	-0.004 [2.87]**	-0.001 [0.47]	-0.004 [2.12]*
Have internet (0=no, 1=yes)	-0.008 [0.77]	0.005 [1.80]	0.008 [1.01]	-0.004 [0.87]
Very active member of church (0=no, 1=yes)	-0.007 [0.63]	0.049 [8.12]**	-0.009 [1.16]	0.004 [0.82]
gender of respondent (0=female, 1=male)	0.022 [2.36]*	-0.004 [1.81]	0.008 [1.35]	0.01 [2.60]**
University educated (0=no, 1=yes; less than secondary omitted)	-0.034 [2.63]**	0.004 [1.09]	0.02 [2.08]*	0.014 [2.08]*
Currently student (0=no, 1=yes)	-0.032 [1.55]	0.004 [0.65]	0.001 [0.05]	0.012 [1.41]
Farming (0=no, 1=yes, manual labour omitted)	0.043 [1.50]	-0.006 [1.28]	0.093 [1.73]	-0.008 [0.96]
European ethnicity (0=no, 1=yes)	0.011 [0.88]	0.002 [0.54]	0.018 [2.39]*	-0.014 [3.06]**
Maori ethnicity (0=no, 1=yes)	0.014 [1.09]	-0.01 [2.94]**	-0.007 [0.91]	0.2 [12.03]**
Asian ethnicity (0=no, 1=yes)		0 [0.01]	-0.018 [1.13]	-0.01 [0.80]
Receives NZ Superannuation (0=no, 1=yes)	0.029 [1.81]	0.001 [0.21]	0.023 [1.81]	-0.005 [0.90]
Receives family assistance (0=no, 1=yes)	0.06 [3.04]**	-0.004 [1.17]	-0.014 [1.37]	0.007 [1.08]
Household income >\$120,000 (0=no, 1=yes)	0.01 [0.61]	-0.002 [0.69]	-0.001 [0.07]	-0.001 [0.14]
Divorced (0=no, 1=yes)	0.012 [0.82]	0.006 [1.26]	0.051 [3.98]**	-0.002 [0.35]
Left wing (0=no, 1=yes)	-0.039 [3.88]**	-0.006 [2.47]*	0.07 [7.29]**	0.005 [1.11]
Don't know own ideology (0=no, 1=yes)	-0.026 [2.48]*	0.012 [2.45]*	0.029 [2.40]*	0.003 [0.58]
Good household financial situation vs last year (1= better ; 0= equal or worse)	0.006 [0.57]	-0.002 [0.93]	0.004 [0.60]	-0.003 [0.77]
Good state of the economy vs last year (1=better, 0= equal or worse)	0.003 [0.29]	0.001 [0.34]	-0.012 [2.01]*	0.005 [1.05]
Expect better national economy next year (1= better ; 0= equal or worse)	-0.025 [2.40]*	0.006 [1.41]	0.002 [0.22]	-0.006 [1.48]
Don't know previous govt performance (0=no, 1=yes)	0.013 [0.55]	0.006 [0.95]	0.038 [1.55]	-0.006 [0.88]
Previous government performance good (0=no, 1=yes)	-0.003 [0.36]	-0.004 [1.54]	0.021 [3.07]**	-0.024 [4.75]**
Pseudo R-squared	0.09	0.29	0.23	0.40

Probit specification; marginal effects reported. Asian ethnicity predicts failure perfectly in the NZ First specification and is dropped.

voting NZ First, and a slight decrease in the probability of voting United Future and Maori.

Karp (2005) argues that the New Zealand Election Survey suggests voter ignorance does not affect voter behavior. Karp analyzes data from the 1996 and 1999 NZES and finds that individuals with less knowledge of the effects of the party vote are no more likely incorrectly to cast a split-ticket ballot and are no less likely to vote sincerely. My study differs from his in a few ways. First, I take a much broader conception of political ignorance. Second, I am far more interested in whether political ignorance affects party and policy preference than in whether it affects voter strategies. Regardless of its effects on split or straight ticket voting, ignorance seems to matter in determining the content of the ballot. Karp sought to determine whether MMP was too complicated for voters to understand; I here am examining whether ignorance affects party and policy preferences.

Inability to place oneself on an ideological spectrum was left out of the construction of the ignorance index because it seemed likely that non-traditional parties' supporters might well identify themselves as being off the standard spectrum. We here find indeed that while a standard deviation increase in ignorance decreases the probability of supporting the Greens by 1.3%, not identifying oneself on the ideological spectrum correlates with a 2.9% increased probability of supporting the Green Party. Inability to place oneself on the spectrum also correlates with a 10.4% increased chance of supporting Labour and a 6.4% reduced chance of supporting National: in that case, it seems more likely that inability to place oneself on the spectrum more properly can be viewed as a part of overall ignorance.

We typically view voters as being more likely to support the incumbent when economic times are good and more likely to support challengers when the economy fares poorly: economic retrospective voting.²² Whether voters base such decisions on their own economic circumstances (egocentric voting) or on overall economic conditions (sociotropic voting) remains a matter of some debate (Caplan, 2002). Results here suggest sociotropic voting. Improvements in one's own financial situation are

²² See Mueller (2003) at section 19.3 for a survey of the literature.

uncorrelated with voting decisions while perceptions of the general state of the economy, expectations of the subsequent year's economic performance, and one's overall evaluation of the previous government's performance all correlate strongly with voter choices: in all cases, perceived good times correlate with support for the incumbent. Someone rating the economy as having improved over the prior year was 10% more likely to support the incumbent Labour government and 5% less likely to support National. Interestingly, those responding "don't know" when asked about the previous government's performance were 34% more likely to support Labour.

Other interesting findings include that voters with internet access are less likely to vote but more likely to support National, Act and United Future, that very active church members are about 8% less likely to support National and 5% more likely to support United Future, that Labour's play for the student vote with zero percent student loans seems not to have paid off as neither current nor former university students were more likely to support Labour in 2005, that Maori were 21.5% less likely to support National in a somewhat racially-charged election, that New Zealand First drew disproportionate support both from superannuitants and from those on family assistance, that those on high incomes weren't particularly likely to support any party but that the divorced were almost 9% less likely to support Labour and 5% more likely to support the Greens.

III.4: Cueing: meliorating ignorance?

The evidence here presented rather strongly suggests that political ignorance is not unbiased. We cannot rely on the law of large numbers to protect us from its effects. As noted earlier, however, the effects of ignorance on policy preference may be attenuated by the availability of useful cue-givers: people on whom the ignorant can rely in helping them to make political decisions. If Lupia's argument is correct, the politically ignorant who are members of useful cue-giving organizations will behave more like others to whom they are otherwise similar. If we repeat each of the prior specifications, but interact the ignorance variable with membership in any such organization, we should find that the interaction term is significant and opposite in sign to the ignorance term. If the interaction terms do not attenuate the effects of ignorance, we might be less confident in Lupia's cue-giving mechanisms and in Wittman's use of them to generate optimistic

conclusions about the effects of political ignorance.

$$\text{Policy} = \alpha + \theta \text{Ignorance} + \sigma(\text{Ignorance} * \text{Group}) + \beta X_1 + \omega G + \varepsilon$$

$$\text{Party} = \alpha + \theta \text{Ignorance} + \sigma(\text{Ignorance} * \text{Group}) + \beta X_1 + \omega G + \varepsilon$$

$$H_1: \text{Cueing attenuates ignorance: } |\theta| > |\theta + \sigma|$$

I began by defining group membership very broadly: indicating membership in a union, professional, business, environmental social, community, sports or hobby organization or club, church, special interest group, or whanau organization was sufficient. With this broad definition, 76% of respondents were members of a potentially cue-giving organization. All prior regressions were re-run using this broad conception of group membership. In 29 regressions, 17 had interaction terms with opposite sign to the ignorance variable; in 12 cases, they ran in the same direction. Table 8, below, lists the specifications in which the point estimate for ignorance fell outside the 90% confidence interval for the linear combination of the interaction term with ignorance: in other words, the cases in which the ignorance term was significantly different from its joint effect with the interaction of ignorance with group membership. In four cases, group membership significantly attenuated effects; in two cases, it significantly exacerbated effects. In seven specifications,²³ ignorance had a significant effect that was not offset by group membership.

I then narrowed the definition of group membership by dropping membership in sports, social and hobby groups, leaving 65% of respondents as group members. Again, all prior regressions were re-run. This time, 16 had interaction terms with opposite sign to the ignorance variable, with 13 running in the same direction. The interaction term attenuates the effects of ignorance in three specifications and exacerbates it in two specifications; details are provided in column 3 of Table 7. In nine specifications,²⁴ ignorance had a significant effect not offset by group membership.

²³ Health spending, death penalty, government ownership of LandCorp, unemployed should work for benefits, welfare encourages dependence, economic thinking, and likelihood of voting. Significance here and below evaluated at the 10% level.

²⁴ Health spending, death penalty, generalized tax reductions, government ownership of LandCorp, government ownership of the electricity commission, unemployed should work for benefits, welfare encourages dependence, economic thinking, and likelihood of voting.

Narrowing the definition of group membership still further, including only members of unions, professional associations, business organizations, environmental groups and special interest groups, left us with 41% of respondents as members of an organization. Fourteen specifications produced interaction terms with coefficients of opposite sign to the ignorance variable. In four cases, group membership significantly attenuated the effects of ignorance; in two cases, it significantly exacerbated ignorance's effects; details are listed in column 4 of Table 7. Ignorance's significant effects on policy preferences failed to be significantly attenuated by group membership in thirteen specifications.²⁵

Table 8: Testing Lupia

Specification	Broad group definition		Middle group definition		Narrow group definition	
	Ignorance	Interaction	Ignorance	Interaction	Ignorance	Interaction
GM foods relatively safe	0.13 (2.57)**	-0.10 (1.91)	0.12 (2.73)**	-0.09 (1.98)*		
Assist low income families	-0.11 (2.91)**	0.08 (2.20)*	-0.13 (3.99)**	0.12 (3.62)**	-0.09 (3.61)**	0.12 (3.71)**
Homosexuality is wrong	-0.01 (0.28)	0.07 (1.26)			0.07 (2.02)**	-0.07 (1.53)
Government ownership of Kiwibank			0.03 (0.66)	0.10 (2.22)*		
Unemployed should work for benefits					-0.05 (1.68)	-0.09 (2.41)*
Business has too much power					-0.03 (0.95)	0.05 (1.44)
Labour support	0.02 (0.67)	0.03 (1.15)	0.02 (0.95)	0.03 (1.24)		
NZ First support					0.01 (2.20)*	-0.02 (2.18*)
United Future support	-0.02 (1.95)	0.01 (1.72)	-0.01 (2.46)	0.004 (0.98)		
Green Party support	-0.004 (0.61)	-0.01 (1.47)			-0.01 (1.33)	-0.01 (1.50)

Table lists the specifications in which the interaction of ignorance and group membership significantly affected the effects of ignorance on the dependent variable listed in the first column. Each column presents summary results of 29 separate specifications, listing only cases where the point estimate on ignorance fell outside of the 90% confidence interval for the sum of ignorance and the interaction term.

²⁵ Genetically modified foods are relatively safe, environmental spending, health spending, death penalty, generalized tax reductions, government ownership of Kiwibank, government ownership of LandCorp, government ownership of the electricity commission, welfare encourages dependence, economic thinking, likelihood of voting, support for the Labour party, support for United Future.

On the whole, the analysis here suggests that Lupia's cueing mechanisms are not particularly potent. While membership in cue-giving groups sometimes attenuates the effects of ignorance, it also often amplifies those effects. For the most part, such membership plays no significant role in channeling ignorance's effects in either direction: ignorance correlates strongly with preferences regardless of the availability of relevant cue-givers.

IV. Conclusion

If ignorance were unbiased, or if the politically ignorant had easy recourse to cue-givers who successfully helped them to behave as though they were fully informed, we would have fewer worries about the potential for political failure. Nobody expects widespread market failure from that most people don't know how car engines run; consumers in political markets could similarly be able to function well despite knowing very little about the operation of the political process. Using a dataset allowing for testing of ignorance's effects, I here have shown that ignorance correlates reasonably strongly with policy and party preferences and with failure to understand economics. Moreover, the effects are not trivial, often well outpacing the effects of education. Even worse, membership in the types of organizations most likely able to provide adequate cue-givers fails to substantially attenuate ignorance's effects. We can perhaps take some comfort in that the politically ignorant also are somewhat less likely to vote. While Wittman's tales of democratic efficiency are comforting, we ought not take too much solace from them.

While I have shown that ignorance causes bias, it would be far too hasty to say that ignorant Kiwis are generally biased towards the New Zealand Labour Party. Results here could simply reflect incumbency bias. Alternatively, the pattern could well be explained under rational expectations where the Labour Party promised to undertake more regulatory measures to protect people from the consequences of their choices, and the politically ignorant could perhaps be more likely to be in need of such protection. Isolation of incumbency effects versus biases towards the Labour Party would require analysis of prior years of the New Zealand Election Survey when Labour was not the incumbent and will be the subject of future work.

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Appendix

Appendix Table 1: Principal Component analysis of ignorance measures.

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	2.00881	1.08339	0.4020	0.4020
Factor 2	0.92652	0.15955	0.1853	0.5873
Factor 3	0.76697	0.04950	0.1534	0.7407
Factor 4	0.71747	0.13835	0.1435	0.8842
Factor 5	0.57912		0.1158	1.0000

$P > \chi^2 = 0.0000$, $N=3743$; 1 retained factor.

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
Ideology ignorance	0.6801	0.5375
MMP ignorance	0.6130	0.6242
Quiz ignorance	0.3764	0.8683
Previous Govt ignorance	0.7558	0.4287
Representative ignorance	0.6772	0.5414

Appendix Table 2: Summary statistics

Variable	N	Avg	st.dev	Min	Max
Principal component ignorance measure	3743	0	1	-1.74	3.21
Principal component "economic thinking"	3378	0	1	-3.05	2.66
interest in politics (1=very; 4= not at all)	3682	2.01	0.77	1	4
Follow political news in newspaper (1=often, 4=not at all)	3479	2.02	0.98	1	4
Follow political news on internet (1=often, 4=not at all)	3718	3.65	0.75	1	4
Age (years)	3639	51.68	16.4	18	103
gender of respondent (0=female, 1=male)	3706	0.44	0.5	0	1
Seek out news about politics? (0=no, 1=yes)	3743	0.19	0.4	0	1
Pay no attention to political news	3743	0.08	0.27	0	1
Have internet	3743	0.66	0.47	0	1
Active member business group	3743	0.07	0.26	0	1
Very active member professional org	3743	0.03	0.18	0	1
Member political interest group	3743	0.79	0.4	0	1
Active member political interest group	3743	0.07	0.26	0	1
Very active member of church	3743	0.16	0.37	0	1
Member community service group	3743	0.69	0.46	0	1
V. active member com. service group	3743	0.12	0.33	0	1
Member hobbies group or club	3743	0.62	0.48	0	1
Member whanau, hapu, other Maori group	3743	0.67	0.47	0	1
Very active member Maori group	3743	0.08	0.27	0	1
Live in town 25K-100K	3743	0.18	0.38	0	1
Live in major city >100K	3743	0.39	0.49	0	1
Secondary school	3743	0.44	0.5	0	1
Some tertiary education	3743	0.25	0.44	0	1
University educated	3743	0.17	0.37	0	1

Appendix Table 2: Summary statistics (continued)

Variable	N	Avg	st.dev	Min	Max
Secondary school	3743	0.44	0.5	0	1
Some tertiary education	3743	0.25	0.44	0	1
University educated	3743	0.17	0.37	0	1
Currently student	3743	0.05	0.21	0	1
Unpaid work in home	3743	0.07	0.25	0	1
Managerial	3743	0.12	0.32	0	1
Professional	3743	0.24	0.423	0	1
Tech	3743	0.1	0.31	0	1
Clerical	3743	0.1	0.3	0	1
Service	3743	0.11	0.31	0	1
Trade	3743	0.12	0.32	0	1
Factory	3743	0.04	0.2	0	1
Farming	3743	0.04	0.19	0	1
Parents expressed political preference	3743	0.69	0.46	0	1
Housing status: owner	3743	0.7	0.46	0	1
european ethnicity	3743	0.7	0.46	0	1
maori ethnicity	3743	0.32	0.47	0	1
asian ethnicity	3743	0.03	0.16	0	1
receives sickness benefit	3743	0.09	0.28	0	1
receives dpb	3743	0.04	0.2	0	1
receives family assistance	3743	0.07	0.25	0	1
receives other benefit	3743	0.03	0.17	0	1
No Household Income	3743	0.02	0.14	0	1
Household income <\$15,900	3743	0.06	0.23	0	1
Household income \$87,600-\$119,999	3743	0.1	0.3	0	1
Household income >\$120,000	3743	0.09	0.29	0	1
Don't know household income	3743	0.12	0.33	0	1
partner student	3742	0.01	0.11	0	1
partner in unpaid work outside home	3742	0.01	0.11	0	1
partner in unpaid work in home	3742	0.05	0.21	0	1
Partner in a supervisory position	3743	0.28	0.45	0	1
Left wing	3743	0.2	0.4	0	1
Right wing	3743	0.16	0.37	0	1
Don't know own ideology	3743	0.17	0.38	0	1
Household financial situation better than last year	3743	0.24	0.43	0	1
Country's financial situation better than last year	3743	0.26	0.44	0	1
Don't know country's financial outlook	3743	0.14	0.34	0	1
Country's financial outlook better for next year	3743	0.16	0.36	0	1
Don't know prev. govt performance	3743	0.04	0.21	0	1
Previous government performance good	3743	0.66	0.47	0	1

Appendix Table 3: Predicting ignorance

Dependent variable: Ignorance measure (higher = more ignorant)

	Principal component Ignorance measure
Lack of interest in politics (1=very interested; 4= not at all interested)	0.082 [3.69]**
Seek out news about politics? (0=no, 1=yes)	-0.09 [2.42]*
Pay no attention to political news (0=no, 1=yes)	0.198 [3.68]**
Have internet (0=no, 1=yes)	-0.079 [2.26]*
Follow political news on internet (1=not at all, 4=often follow)	-0.068 [3.54]**
Follow political news in newspaper (1=not at all, 4=often follow)	-0.08 [5.12]**
Active member business group (0=no, 1=yes)	0.084 [1.63]
Member political interest group (0=no, 1=yes)	-0.124 [2.56]*
Active member political interest group (0=no, 1=yes)	-0.169 [2.55]*
Very active member of church (0=no, 1=yes)	-0.117 [3.14]**
Member community service group (0=no, 1=yes)	-0.128 [3.02]**
V. active member com. service group (0=no, 1=yes)	-0.093 [1.80]
Active member hobbies group or club (0=no, 1=yes)	0.1 [1.96]*
V. Active member hobbies group or club (0=no, 1=yes)	-0.101 [1.73]
Age (years)	-0.035 [6.26]**
age2 (years squared)	0 [4.80]**
gender of respondent (0=female, 1=male)	-0.183 [6.23]**
Live in country town <20K (0=no, 1=yes)	0.079 [1.99]*
Live in large town 25K - 100K (0=no, 1=yes)	0.095 [2.74]**
Some tertiary education (0=no, 1=yes; less than secondary omitted)	-0.145 [4.38]**
University educated (0=no, 1=yes; less than secondary omitted)	-0.369 [8.45]**
Currently student (0=no, 1=yes)	-0.13 [2.01]*
Supervisory position at work (0=no, 1=yes)	-0.062 [2.17]*
managerial (0=no, 1=yes, manual labour omitted)	-0.169 [2.70]**
professional (0=no, 1=yes, manual labour omitted)	-0.068 [1.21]

Appendix Table 3: Predicting ignorance (continued)

Dependent variable: Ignorance measure (higher = more ignorant)

Tech (0=no, 1=yes, manual labour omitted)	-0.255 [4.16]**
Clerical (0=no, 1=yes, manual labour omitted)	-0.262 [4.16]**
Service (0=no, 1=yes, manual labour omitted)	-0.164 [2.76]**
Trade (0=no, 1=yes, manual labour omitted)	-0.147 [2.49]*
Factory (0=no, 1=yes, manual labour omitted)	-0.123 [1.56]
Farming (0=no, 1=yes, manual labour omitted)	-0.377 [4.66]**
Parents expressed political preference (0=no, 1=yes)	-0.153 [5.12]**
Home owner (0=no; 1=own home)	-0.085 [2.34]*
European ethnicity (0=no, 1=yes)	-0.066 [1.56]
Maori ethnicity (0=no, 1=yes)	0.374 [9.31]**
Asian ethnicity (0=no, 1=yes)	0.107 [1.13]
Receives NZ superannuation (0=no, 1=yes)	-0.119 [2.38]*
receives sickness benefit (0=no, 1=yes)	-0.096 [1.89]
receives domestic purposes benefit (0=no, 1=yes)	0.149 [2.17]*
receives family assistance (0=no, 1=yes)	0.092 [1.74]
No Household Income (0=no, 1=yes)	0.173 [1.77]
Household income <\$15,900 (0=no, 1=yes)	0.125 [2.11]*
Household income \$87,600-\$119,999 (0=no, 1=yes)	-0.084 [1.87]
Household income >\$120,000 (0=no, 1=yes)	-0.177 [3.66]**
Don't know household income (0=no, 1=yes)	0.214 [4.96]**
Divorced (0=no, 1=yes)	0.059 [1.24]
Widowed (0=no, 1=yes)	0.123 [1.92]
partner retired (0=no, 1=yes)	-0.084 [1.62]
Partner disabled (0=no, 1=yes)	0.095 [1.01]
partner student (0=no, 1=yes)	0.199 [1.68]
Partner in unpaid work outside home (0=no, 1=yes)	-0.122 [1.03]

Appendix Table 3: Predicting ignorance (continued)**Dependent variable: Ignorance measure (higher = more ignorant)**

Left wing (0=no, 1=yes)	-0.302 [8.67]**
Don't know own ideology (0=no, 1=yes)	0.588 [15.21]**
Household financial situation better than last year (0=no, 1=yes))	-0.062 [1.88]
Country's financial situation better than last year (0=no, 1=yes)	-0.044 [1.32]
Don't know country's financial outlook (0=no, 1=yes)	0.078 [1.91]
Country's financial outlook better for next year (0=no, 1=yes)	0.132 [3.39]**
Don't know prev. govt performance (0=no, 1=yes)	0.177 [2.50]*
Previous government performance good (0=no, 1=yes)	0.09 [2.89]**
Constant	1.668 [9.14]**

OLS, result of General to Specific reduction. Standard errors not corrected for general to specific reduction; coefficients significant at the 10% level in the first specification are bolded. N=3219, Adjusted R-squared: 0.47. * significant at 5%; ** significant at 1%

Appendix Table 4: Principal Component analysis of economic preferences.

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	2.33494	1.12637	0.2919	0.2919
Factor 2	1.20857	0.24721	0.1511	0.4429
Factor 3	0.96136	0.10368	0.1202	0.5631
Factor 4	0.85768	0.03686	0.1072	0.6703
Factor 5	0.82082	0.04975	0.1026	0.7729
Factor 6	0.77108	0.07073	0.0964	0.8693
Factor 7	0.70035	0.35515	0.0875	0.9569
Factor 8	0.3452	.	0.0431	1

P>chi2 = 0.0000, N=3743; 2 retained factors.

Factor loadings (pattern matrix) and unique variances

Variable	Factor 1	Factor 2	Uniqueness
Female pay	0.3360	0.4206	0.7102
Taxes and labour supp	-0.1005	0.6498	0.5677
Wage controls	0.7510	0.2692	0.3635
Price controls	0.8299	0.1139	0.2983
Import controls	0.6341	-0.0720	0.5927
Immigration good	0.3766	-0.4458	0.6595
Minimum wage	-0.3887	0.5550	0.5409
Government jobs	0.5140	0.1100	0.7237