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Core Principles and Policy Reasoning in Mass Publics: A Test of Two Theories

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Political scientists have debated whether citizens can use core principles in lieu of ideological orientations to deduce their policy preferences. The 'General Use' model of public opinion holds that everyone draws equally on core principles to determine their preferences. The 'Expertise Interaction' model holds that the extent to which core principles influence policy preferences is a function of political expertise. Unfortunately, research design and measurement problems in extant work preclude a resolution of this debate. Here I account for these problems, test the predictions of both models, and find empirical support for each. The results demonstrate that while there is a moderate tendency for political expertise to strengthen the relationship between core beliefs and policy preferences, virtually all citizens use core beliefs to deduce preferences.

Virtually all variants of democratic theory emphasize the importance of communication between citizens and their elected representatives. Most political philosophers and political scientists believe that citizens should send clear policy signals to their representatives. Policy signals provide general guidance about what citizens want their representatives to accomplish in office and serve as benchmarks by which citizens hold them accountable for their performance in office. If people send clear policy messages to elected officials, the behaviour of the latter will be constrained by the preferences of the former. Given the normative importance of this topic, public opinion specialists have exhaustively studied how citizens make political judgements.

While it is now widely accepted that political expertise promotes ideological reasoning,[1] the extent to which citizens use core beliefs and values to deduce issue preferences is an open and contentious question. This is a critical research question because if most people can use core beliefs and values, then the possibility of meaningful mass-elite communication is within reach. Numerous public opinion specialists hold that most citizens use their core beliefs and values to deduce preferences on social and political issues.[2] The 'General Use' model

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[1] Philip E. Converse, 'The Nature of Belief Systems in Mass Publics', in David Apter, ed., *Ideology and Discontent* (New York: Free Press, 1964); William G. Jacoby, 'Ideological Identification and Issue Attitudes', *American Journal of Political Science*, 35 (1991), 178–205; Paul M. Sniderman, Richard A. Brody and Philip E. Tetlock, *Reasoning and Choice: Explorations in Political Psychology* (New York: Cambridge University Press, 1991).

[2] Stanley Feldman, 'Structure and Consistency in Public Opinion: The Role of Core Beliefs and Values', *American Journal of Political Science*, 32 (1988), 416–40; Stanley Feldman, 'Economic Individualism and American Public Opinion', *American Politics Quarterly*, 11 (1983), 3–29; Stanley

is certainly plausible, but it is important to note that in most applications of this model scholars have not tested the rival hypothesis that political expertise conditions these linkages.[3] This model has been challenged by those who argue that citizens need to be at least somewhat informed about public affairs in order to connect their core principles to their policy preferences.[4] The 'Expertise Interaction' model is also reasonable, but the evidence on which it rests is almost entirely indirect. More precisely, there is little empirical evidence that measures of political expertise strengthen the connection between direct measures of core beliefs and issue positions.[5] In sum, the question of whether political expertise promotes the use of core principles remains unsettled.

The purpose of this article is to assess the empirical validity of the General Use and Expertise Interaction models of public opinion. First, I discuss the competing theoretical perspectives and explain why the extant work cannot adequately resolve which model better explains how people render issue judgements. Next, I test whether political expertise strengthens the connections between core beliefs and values and specific policy preferences and determine if most citizens are capable of principled political thought. The tests are conducted on the issues of social welfare, Affirmative Action and gay rights, using data from the 1986 and 1992 National Election Study surveys.[6] Finally, I summarize the implications of these findings for our understanding of public opinion and for evaluations of contemporary democratic citizenship.

TWO MODELS OF PUBLIC OPINION

The use of abstract principles enables people to understand and organize a wide range of political information that would otherwise be difficult to manage. Citizens can draw upon alternative general principles in place of ideology to structure more specific preferences. Among the most important of these are core beliefs and values. Core beliefs are general descriptive beliefs about human nature and society in matters of public affairs. Core values are evaluative

(F'note continued)
Feldman and John Zaller, 'The Political Culture of Ambivalence: Ideological Responses to the Welfare State', *American Journal of Political Science*, 36 (1992), 268–307; Jon Hurwitz and Mark Peffley, 'How are Foreign Policy Attitudes Structured? A Hierarchical Model', *American Political Science Review*, 81 (1987), 1099–120.

[3] The terms 'political expertise' and 'political sophistication' are used interchangeably throughout this article.

[4] Michael X. Delli Carpini and Scott Keeter, *What Americans Know About Politics and Why It Matters* (New Haven, Conn.: Yale University Press, 1996); John R. Zaller, *The Nature and Origins of Mass Opinion* (New York: Cambridge University Press, 1992); John R. Zaller, 'Information, Values, and Opinion', *American Political Science Review*, 85 (1991), 1215–37.

[5] This is discussed at length in the next section.

[6] The data for this study were made available by the Inter-University Consortium for Political and Social Research and were originally collected by the University of Michigan's Center for Political Studies for the National Election Studies. These organizations bear no responsibility for the analyses and interpretations reported in this article.

standards citizens use to judge alternative social and political arrangements.[7] Core beliefs and values help people figure out 'what goes with what' within different policy domains. For instance, people may draw upon broader beliefs about the work ethic and equal opportunity to guide their positions on government provision of social welfare.

Political expertise can be defined as the ability to use organized political knowledge stored in long-term memory to process political information. Those high in expertise readily encounter political information in the immediate environment and possess a large store of factual and associational political knowledge that facilitates the comprehension and manipulation of this information. Those with little or no expertise do not follow public affairs closely, have very limited political knowledge stores, and are much less adept at processing political information. Political expertise is best conceptualized as varying along an underlying continuum. Expertise differences should be viewed as differences in degree, rather than differences in kind.[8]

Given definitions of the key concepts, the two models of public opinion are now described in detail. As mentioned, the General Use model holds that most – if not all – citizens use core beliefs and values to deduce their policy preferences. There are two reasons for this. First, as Feldman argues, core beliefs and values are central components of a stable and enduring mainstream political culture. The beliefs and values associated with this culture are easily recognized and understood by most citizens. In such an environment it 'should not require a high degree of political sophistication for people to absorb the political norms of society when they are so ingrained in the political and social life of the nation.'[9] The second factor accounting for the general use effect, following Hurwitz and Peffley, is that core beliefs and values are specific to particular policy domains. Because these principles are tied to one or two particular areas of public policy, citizens do not need to develop and utilize capstone principles to promote cohesion that spawns entire belief systems. Under these circumstances, most people can connect domain-specific principles to policy preferences in a given domain with little difficulty.[10]

The General Use model has been challenged in works that analyse how political expertise affects issue judgements. The fundamental hypothesis here

[7] Feldman, 'Structure and Consistency in Public Opinion: The Role of Core Beliefs and Values'; Herbert McClosky and John Zaller, *The American Ethos* (Cambridge, Mass.: Harvard University Press, 1984).

[8] Converse, 'The Nature of Belief Systems in Mass Publics'; Ruth Hamill and Milton Lodge, 'Cognitive Consequences of Political Sophistication', in Richard R. Lau and David O. Sears, eds, *Political Cognition* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1986); Milton Lodge and Ruth Hamill, 'A Partisan Schema for Political Information Processing', *American Political Science Review*, 80 (1986), 505–19; Robert C. Luskin, 'Measuring Political Sophistication', *American Journal of Political Science*, 31 (1987), 856–99; Sniderman, Brody and Tetlock, *Reasoning and Choice: Explorations in Political Psychology*.

[9] Feldman, 'Structure and Consistency in Public Opinion', p. 418.

[10] Hurwitz and Peffley, 'How are Foreign Policy Attitudes Structured? A Hierarchical Model', pp. 1103–6.

is that political expertise conditions the relationship between general principles and policy preferences. The more politically sophisticated people are, the more heavily their issue positions depend on their abstract beliefs and values. And given that many people are uninformed about public affairs, the model holds that the unsophisticated portions of the electorate will be unable to use core principles to render policy preferences. While the empirical evidence presented in these works is consistent with the expertise interaction hypothesis, it is essential to recognise that very little of it clearly shows that expertise strengthens these relationships.

Zaller has presented the most comprehensive analysis of how political expertise affects the relationship between core principles and issue judgements. He rigorously tests the expertise interaction hypothesis in multiple decision areas and finds much to support it.[11] However, there is little direct evidence that expertise influences how people use core beliefs and values, because data limitations force him to rely almost exclusively on proxy measures of core principles. He confronts this problem by arguing that value systems are organized by broader ideological principles, which are overarching liberal–conservative or left–right orientations that guide more specific political beliefs and attitudes.[12] Therefore, he argues that measures of ideological self-identification can serve as rough proxies for core values.[13] This is an excellent point provided that the ideology measure is moderately correlated with the core belief and value measures for *all* citizens. If reasonable correlations exist only among the highly informed, then one can ask if any lack of evidence of deductive political reasoning among the poorly informed is due to lack of expertise or of appropriate measures.

This matter can be investigated using NES data to compare Pearson correlation coefficients between measures of ideological self-identification and the core belief variables used below for politically sophisticated and unsophisticated segments of the samples.[14] Table 1 shows that the correlations between the 7-point liberal–conservative measure of ideology and the core belief indicators are much higher in the sophisticated group. For instance, the correlation between ideology and equal opportunity is 0.40 for the sophisticated

[11] Zaller is more interested in examining attitude change over time than attitude linkages at a single point in time. Nevertheless, the model can be read as positing that political expertise will promote principled political thought at any single point in time. See Zaller, *The Nature and Origins of Mass Opinion*.

[12] Converse, 'The Nature of Belief Systems in Mass Publics', p. 214.

[13] The measurement problem is not with a general lack of direct value measures, but with a lack of such measures during periods of opinion change. See Zaller, *The Nature and Origins of Mass Opinion*, pp. 26–7.

[14] The standard self-identification measure is used to gauge respondent ideology. This is a 7-point scale in which responses range from 'strong liberal' to 'strong conservative'. The scale midpoint is labelled 'moderate'. Using the political knowledge indicators described in the next section, I define 'sophisticated' as those whose knowledge scores equal or exceed 5. The 'unsophisticated' are those with knowledge scores equal to 1 or 0. The items used to measure these variables (as well as those for all dependent variables) are listed in the Appendix. Descriptive statistics appear in Table A.

TABLE 1 *Pearson Correlations between Ideology and Core Principles by Level of Expertise*

	Sophisticated	Unsophisticated
1986 NES		
Economic individualism	0.39	0.10
Equal opportunity opposition	0.40	0.03
Blame blacks for racial inequality	0.50	0.09
1992 NES		
Moral conservatism	0.53	0.16
Equal opportunity	0.48	0.07
Mean correlation	0.46	0.09

Note: The Sophisticated score 5 or higher on the knowledge scale. The Unsophisticated score 1 or 0 on the knowledge scale. African Americans excluded from the 1986 NES sample. Weighted data are used for the 1992 NES sample.

and 0.03 for the unsophisticated in the 1986 sample and 0.48 and 0.07, respectively, in the 1992 sample. Similarly, the correlation between ideology and beliefs about racial inequality is 0.50 for the sophisticated and 0.09 for the unsophisticated (1986 NES). The correlation coefficients range from 0.39 to 0.53 for the sophisticated group and 0.03 to 0.16 for the unsophisticated group, while the average correlation between ideology and core beliefs is 0.46 for the sophisticated and 0.09 for the unsophisticated. Given the very low correlations for the unsophisticated group, supporters of the General Use model can argue that ideology is not a valid proxy measure of core beliefs and that employing it as such will underestimate the ability of those low in expertise to manifest evidence of deductive political reasoning.

Delli Carpini and Keeter also argue that the links between core principles and policy preferences become stronger as sophistication rises. They show that increasing political knowledge leads to greater attitude stability over time and to higher levels of internal consistency among issue attitudes and subsequently infer that the highly informed draw heavily on general beliefs and values to structure more specific issue positions.[15] Although this is a plausible interpretation, it can be objected that the use of aggregate consistency measures and factor analytic procedures leaves open the possibility that other latent factors may explain differences in attitude quality.[16] Without directly estimating the impact political expertise has on the use of core principles, it is difficult to draw inferences about the factors driving these results. In sum, although these works have greatly added to what we know about public opinion in a number of important respects, the critical point for my argument is that there is very little

[15] Delli Carpini and Keeter, *What Americans Know About Politics and Why it Matters*, pp. 227–38.
[16] See Luskin, 'Measuring Political Sophistication', for a thoughtful discussion on these points.

direct evidence that political expertise strengthens the vertical connections between core beliefs and policy preferences.[17]

ANALYSIS

The General Use model holds that all citizens draw equally on core principles to determine their issue positions. The Expertise Interaction model posits that political expertise strengthens these connections and that the politically unsophisticated are unlikely to reason in this fashion. These predictions are tested here on the issues of social welfare policy, Affirmative Action for African Americans and gay rights. These issues represent some of the most important and enduring domestic political conflicts in the American political system and thus allow for a broad test of the two models. The data used to test the models are taken from the 1986 and 1992 NES surveys, because these studies contain the necessary measures of all key variables. Note also that all dependent variables are measured using interval-level data; therefore, ordinary least squares regression is employed throughout this study.

The first test is in the domain of social welfare policy (1986 NES data). The dependent variable is respondent opposition to government provision of social welfare. The measure is an additive scale based on whether respondents favour or oppose increased government services and spending, government efforts to ensure that everyone has a job and a good standard of living, government efforts to improve the conditions of blacks and other minorities and increased federal spending on food stamps, blacks, and the unemployed (25-point scale, Cronbach's $\alpha = 0.69$).[18] The variable is coded so that higher scores reflect greater opposition.

Social welfare opposition is modelled as a function of demographic characteristics, party identification, feelings towards perceived programme beneficiaries, core economic principles and the conditional effects of expertise.[19] Some prior work indicates that blacks and women are more supportive

[17] Two additional studies have analysed the impact of political sophistication on deductive reasoning. Because these works focus on one or two specific domains they cannot adequately address the broader question of whether expertise promotes deductive reasoning across policy domains. See James H. Kuklinski, Daniel Metlay and W. D. Kay, 'Citizen Knowledge and Choices on the Complex Issue of Nuclear Energy', *American Journal of Political Science*, 26 (1982), 615–42; David O. Sears, Leonie Huddie and Lynitta G. Schaffer, 'A Schematic Variant of Symbolic Politics Theory, as Applied to Racial and Gender Equality', in Richard R. Lau and David O. Sears, eds, *Political Cognition* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1986). Another study finds that political involvement promotes reliance on core values for 'hard' issues but not 'easy' issues; see Philip H. Pollock, Stuart A. Lilie and M. Elliot Vittes, 'Hard Issues, Core Values, and Vertical Constraint: The Case of Nuclear Power', *British Journal of Political Science*, 23 (1993), 29–50.

[18] Theoretical and empirical justification for this measure can be found in Paul Goren, 'Framing and Political Awareness' (paper presented at the Annual Meeting of the American Political Science Association at Atlanta, Ga., 1999).

[19] Control variable selection and justification is based on Lawrence Bobo and James R. Kluegel, 'Opposition to Race Targeting: Self-interest, Stratification Ideology, or Racial Attitudes', *American Sociological Review*, 58 (1993), 443–64; Fay Lomax Cook and Edith J. Barrett, *Support for the*

of social welfare programmes than non-blacks and men; therefore, the African American and female variables should be negatively related to social welfare opposition, *ceteris paribus*. In contrast, higher income should lead to social welfare opposition, presumably because the better off resent paying taxes to fund government programmes that disproportionately benefit others. Family income (measured in quartiles) should thus be positively related to social welfare opposition. The standard 7-point party identification measure, coded from strong Democrat to strong Republican, is used to tap underlying partisanship. The regression coefficient should of course be positive, indicating that increasing Republican partisanship promotes anti-social welfare sentiment. Finally, people who feel warmly towards those believed to benefit most directly from government programmes should naturally oppose cutting these back. Feelings towards perceived social welfare beneficiaries is measured by summing responses to the 100-point feeling thermometer evaluations of blacks, poor people and people on welfare (Cronbach's $\alpha = 0.60$). Higher scores reflect warmer feelings and so this variable should be inversely related to social welfare opposition.

Past research indicates that citizens rely heavily on beliefs about economic individualism and equal opportunity when evaluating social welfare policies. Economic individualism can be defined as the belief that self-reliance and hard work result in material success and economic advancement.[20] The measure for this variable is an additive scale based on responses to six items asking how strongly people agree or disagree with various statements about hard work and the locus of responsibility for economic success (25 point scale; Cronbach's $\alpha = 0.60$).[21] Higher scores increasingly reflect the belief that hard work pays off. This variable should therefore be positively related to social welfare opposition. Equal opportunity is defined as the normative belief that society should do what is necessary to ensure that everyone has the same chance to get ahead in life.[22] This variable is measured with three items indicating level of agreement with this egalitarian ideal (13-point scale; Cronbach's $\alpha = 0.61$).[23] Higher scores correspond to weaker support and hence equal opportunity opposition should be positively related to social welfare opposition.

Political expertise is best measured using factual political knowledge

(F'note continued)

American Welfare State: The Views of Congress and the Public (New York: Columbia University Press, 1992); and Sniderman, Brody and Tetlock, *Reasoning and Choice.*

[20] Feldman, 'Structure and Consistency in Public Opinion'; Feldman and Zaller, 'The Political Culture of Ambivalence'.

[21] Theoretical and empirical justification for this measure can be found in Martin Gilens, 'Racial Attitudes and Opposition to Welfare', *Journal of Politics*, 57 (1995), 994–1014.

[22] Feldman, 'Structure and Consistency in Public Opinion'; McClosky and Zaller, *The American Ethos*.

[23] Theoretical and empirical justification for this measure is in Goren, 'Framing and Political Awareness'.

scales.[24] I use knowledge scales to measure expertise because experimental work shows that people who score high on these scales exhibit superior information-processing performance across a number of cognitively demanding tasks compared to people with low scores.[25] This is precisely what we would expect if political knowledge effectively taps the expertise construct. Additive scales are formed by summing the number of correct answers respondents give to a series of factual political knowledge questions. The higher the score the more politically sophisticated respondents are. The 1986 expertise variable ranges from 0 to 8 (Cronbach's $\alpha = 0.77$) and the 1992 variable ranges from 0 to 6 (Cronbach's $\alpha = 0.71$).

The test of whether expertise promotes reliance on core economic principles is as follows. Taking the product of two constituent variables produces an interaction variable. For the social welfare domain this procedure yields two interaction terms: (economic individualism) $\times$ (expertise) and (equal opportunity opposition) $\times$ (expertise). The additive model contains all the variables identified above minus the interaction terms; the interactive model simply adds these terms to the additive model. Given that core economic principles are expected to promote social welfare opposition and that these relationships may be more pronounced at higher levels of political expertise, the coefficients for the interaction terms should be positive. A positive, statistically significant interaction coefficient indicates that the relationship between an economic principle and social welfare opposition becomes stronger as expertise rises.

It is critical to realise that the regression coefficients for the constituent core belief and political expertise variables in the *interactive* model do not represent the main or average effect each has on social welfare opposition. Instead, the respective coefficients represent the estimated impact each constituent variable has on social welfare opinion when the other constituent variable assumes a value of zero, *ceteris paribus*.[26] To take an example from the interactive model in Table 2, the regression coefficient for the economic individualism variable ($b = 0.09$) represents its estimated impact on social welfare opposition when expertise equals 0. Given that the minimum value for the expertise variable is 0 (Table A), the coefficients for the economic individualism and equal opportunity variables in the interactive model should be interpreted as the estimated impact each has on social welfare opposition for the least informed segment of the population. Thus, a statistically significant, constituent core principle variable in the interactive model suggests that even the least informed members of the public can deduce specific preferences from general principles.

[24] Michael X. Delli Carpini and Scott Keeter, 'Measuring Political Knowledge: Putting First Things First', *American Journal of Political Science*, 37 (1993), 1179–206; Luskin, 'Measuring Political Sophistication'; Zaller, *The Nature and Origins of Mass Opinion*.

[25] Hamill and Lodge, 'Cognitive Consequences of Political Sophistication'; Lodge and Hamill, 'A Partisan Schema for Political Information Processing'.

[26] Robert J. Friedrich, 'In Defense of Multiplicative Terms in Multiple Regression Equations', *American Journal of Political Science*, 26 (1982), 797–833.

TABLE 2 *Social Welfare Policy Opposition, OLS Regression Estimates*

	Additive model	Interactive model
Constant	11.99***	13.86***
	(0.98)	(1.20)
African American	− 1.57***	− 1.79***
	(0.45)	(0.46)
Female	− 0.76**	− 0.81**
	(0.30)	(0.29)
Family income quartile	0.03	0.03
	(0.14)	(0.14)
Party identification	0.43***	0.40***
	(0.07)	(0.07)
Feelings towards beneficiaries	− (0.03)***	− 0.03***
	(0.00)	(0.00)
Economic individualism	0.20***	0.09 +
	(0.04)	(0.06)
Equal opportunity opposition	0.58***	0.44***
	(0.06)	(0.10)
Political expertise	− 0.03	− 0.66**
	(0.07)	(0.24)
Economic individualism × Expertise		0.04*
		(0.02)
Equal opportunity opposition × Expertise		0.04*
		(0.02)
R^2	0.48	0.49
Standard error of the regression	3.51	3.49
F Statistic	73.42***	60.26***

$+ p < 0.10$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$.
Notes: Standard errors in parentheses. Number of cases, 638.
Source: 1986 NES.

Operationally, if the General Use model more accurately reflects the nature of public opinion, then the regression coefficients for the economic individualism and equal opportunity variables should be positive and significant in the additive model and the coefficients for the interaction terms should be insignificant in the interactive model. If the interaction coefficients are positive and significant and the coefficients for the constituent core principle variables in the interactive models are insignificant, then the Expertise Interaction model can be viewed as a more valid representation of political reasoning.[27]

Table 2 provides the regression estimates for the additive and interactive

[27] Of course, it may be the case that while the most unsophisticated cannot reason deductively about political issues, moderately unsophisticated citizens can. As is made apparent below, this is not a serious issue here.

social welfare opposition models.[28] The first set of findings to note is that the coefficients for the African American, female, party identification and feelings towards beneficiaries variables are correctly signed and statistically significant in both models. Thus, blacks, women, and those who feel sympathetic towards beneficiaries oppose social welfare reductions, while those who more strongly identify with the Republican party favour these. Note also that there is little support for the hypothesis that increasing family income promotes opposition. Next, the additive model estimates show that the coefficients for economic individualism ($b = 0.20$) and equal opportunity ($b = 0.58$) are statistically significant in the expected direction. Therefore, for the sample as a whole, movement from the lowest to the highest point on economic individualism leads to higher levels of social welfare opposition. Similarly, movement from the most to least egalitarian position on equal opportunity raises anti-social welfare sentiment.

Next, the interactive model shows that both interaction terms are positive and significant. The (economic individualism) $\times$ (expertise) coefficient shows that a one-unit rise in expertise increases the impact of individualism on social welfare opposition by 0.04 units ($p < 0.05$). When expertise takes on its maximum value at 8, the estimated impact of economic individualism on social welfare opposition equals 0.38 ($p < 0.001$).[29] The constituent economic individualism variable is also positive and approaches significance ($b = 0.09$, $p < 0.08$), suggesting that even poorly informed citizens use beliefs about individualism to some degree to guide their social welfare positions. Overall, the results indicate that the additive model underestimates the use of individualism by the most informed (additive $b = 0.20$ vs. interactive $b = 0.38$), overestimates its use by the least informed (additive $b = 0.20$ vs. interactive $b = 0.09$), and that everyone uses it to render social welfare judgements.

Table 2 further shows that political expertise enhances reliance on egalitarian beliefs. The coefficient for the (equal opportunity opposition) $\times$ (expertise) variable suggests that each one-unit increase in expertise results in a 0.04 rise in the impact of equality on social welfare opposition ($p < 0.05$). When expertise assumes its maximum value at 8, the predicted impact of equal opportunity opposition on social welfare preferences equals 0.77 ($p < 0.001$).[30] Next, the

[28] Missing value cases are excluded from all analyses. Note also that an extensive battery of regression diagnostics was performed for all the statistical models reported above. Although minor to moderate problems occasionally emerged, the statistical and substantive results reported in the text did not change in any meaningful way when appropriate remedies were applied.

[29] This calculation is based on the formula provided in Friedrich, 'In Defense of Multiplicative Terms in Multiple Regression Equations', p. 805. Mathematically, the estimated impact of economic individualism on social welfare opposition at a given level of expertise is the sum of the constituent individualism regression coefficient (b_{indv}) and the product of the interaction coefficient ($b_{(\text{indv} \times \text{exp})}$) and the raw expertise score (X_{exp}). The formula is: $b_{\text{indv}} + b_{(\text{indv} \times \text{exp})} X_{\text{exp}}$. Thus, given $b_{\text{indv}} = 0.090$, $b_{(\text{indv} \times \text{exp})} = 0.036$, and $X_{\text{exp}} = 8$, we have $0.090 + (0.036)(8) = 0.378$. For presentation purposes, I round up to two decimal places in the text. Standard errors for the coefficient at a given value of expertise can be calculated using the formulas found on p. 810 of Friedrich, 'In Defense of Multiplicate Terms in Multiple Regression Equations'.

[30] See the previous note for how to calculate this estimate.

equal opportunity estimate for the least informed is also positive and highly significant ($b = 0.44$, $p < 0.001$). Thus, among both the well and ill informed, increasing opposition to equal opportunity results in increasing opposition to social welfare. In sum, the results indicate that the impact of egalitarian beliefs on social welfare opinion is biased downward in the additive model for the most informed (additive $b = 0.58$ vs. interactive $b = 0.77$), biased upward in the additive model for the least informed ($b =$ additive 0.58 vs. interactive $b = 0.44$), and that everyone uses this principle to guide position-taking.

The next test focuses on whites' reasoning in the racial policy domain (1986 NES data).[31] The dependent variable represents the extent to which respondents oppose Affirmative Action programmes for blacks. The indicator is a simple additive scale based on whites' opinions about Affirmative Action programmes for blacks in education and employment. It is coded such that higher scores reflect stronger opposition to racial preferences (7-point scale; Tau $c = 0.43$). Affirmative Action opposition is modelled as a function of gender, family income, southern residence, party identification, feelings toward blacks, beliefs about racial inequality, economic individualism, equal opportunity opposition and the interaction terms. Women are expected to take more liberal positions on Affirmative Action for blacks then men, because such programmes are often designed to benefit women. People with higher family income are expected to oppose racial preferences for blacks, presumably for self-interested reasons. Given the higher incidence of racial animosity in the south than the non-south, southerners are expected to evaluate Affirmative Action more critically than non-southerners.[32] For obvious reasons, feelings towards blacks (measured using the feeling thermometer) should be negatively related to Affirmative Action opposition, while party identification should be positively related to such opposition.

The core beliefs and principles expected to influence Affirmative Action opinion are as follows. First, it has been established that racial beliefs have a strong impact on multiple racial policy preferences.[33] Among the most significant factors are beliefs about what causes racial inequality. An individualistic explanation is based on the belief that because blacks have not tried hard enough they have no one but themselves to blame for the persistence of racial inequality. An alternative explanation is rooted in the idea that structural factors have greatly impeded progress for blacks; therefore, they cannot be blamed for lingering racial inequality.[34] Racial inequality beliefs are

[31] Given that blacks and non-blacks use racial beliefs differently and diverge sharply on racial policy attitudes, African Americans are excluded from the analyses. See Gilens, 'Racial Attitudes and Opposition to Welfare'.

[32] James H. Kuklinski, Michael D. Cobb and Martin Gilens, 'Racial Attitudes and the New South', *Journal of Politics*, 59 (1997), 323–50.

[33] Feldman, 'Economic Individualism and American Public Opinion'; Donald Kinder and Lynn M. Sanders, *Divided by Color: Racial Politics and Democratic Ideals* (Chicago, Ill.: University of Chicago Press, 1996).

[34] Gilens, 'Racial Attitude and Opposition to Welfare'.

measured here by asking respondents if they believe that: (1) blacks need to overcome prejudice without special favours; (2) generations of slavery and discrimination have made it hard for blacks to advance; (3) blacks need to try harder; and (4) blacks have recently gotten less than they deserve. The resulting 16-point scale is coded such that higher scores correspond to blaming blacks for racial inequality (Cronbach's $\alpha = 0.74$).[35] The more whites blame blacks for racial problems, the more likely they are to oppose programmes and policies that help blacks. Blaming blacks for racial inequality should thus be positively related to Affirmative Action opposition. In addition, economic individualism and equal opportunity seem likely to influence Affirmative Action opinion. The more strongly whites believe that hard work pays off or oppose further efforts to promote equal opportunity, the more opposition they should express towards racial preferences for blacks. Therefore, the regression coefficients for economic individualism and equal opportunity opposition should be positive. Finally, interaction coefficients are created as above. A positive and statistically significant interaction coefficient will support the inference that expertise strengthens the relationship between a given core principle and opposition to Affirmative Action.

The ordinary least squares (OLS) estimates appear in Table 3. A second interactive model that includes the significant interaction terms from the fully specified interactive model appears in the third column; it more accurately reflects the additive and interactive effects of the core principle variables on Affirmative Action opposition than the other models do. Turning to the results, as expected, family income, southern residence and Republican identification are associated with greater Affirmative Action opposition. In contrast, the more sympathetic whites feels towards blacks, the less likely they are to oppose Affirmative Action. Finally, there is no gender effect, indicating that women do not differ from men in their opinions on this issue.

Secondly, the results from the additive model indicate that the propensity to blame blacks for racial inequality heightens opposition to Affirmative Action for the sample as a whole ($b = 0.20$, $p < 0.001$). The interactive models show that the use of racial beliefs is a function of political expertise (interactive model 2: $b = 0.02$, $p < 0.01$) and that the least informed also draw upon such beliefs (interactive model $b = 0.14$, $p < 0.01$). For the most sophisticated, the estimated impact of racial beliefs on Affirmative Action is 0.29 ($p < 0.001$).[36] Like the social welfare results reported above, it is clear that the additive model understates the impact of racial beliefs on Affirmative Action opinion for the well informed (additive $b = 0.20$ vs. interactive $b = 0.29$) and overstates its impact for the least informed (additive $b = 0.20$ vs. interactive $b = 0.14$). Equally important, the results again indicate that a lack of political expertise does not preclude citizens from deducing specific issue preferences from core

[35] Empirical justification for this measure can be found in Gilens, 'Racial Attitude and Opposition to Welfare'.

[36] See fn. 29.

TABLE 3 *Affirmative Action Opposition, OLS Regression Estimates*

	Additive model	Interactive model 1	Interactive model 2
Constant	1.92***	2.35***	2.60***
	(0.39)	(0.55)	(0.48)
Female	0.01	0.02	0.02
	(0.12)	(0.12)	(0.12)
Family income quartile	0.08 +	0.07 +	0.07 +
	(0.06)	(0.06)	(0.06)
Southern resident	0.29*	0.31**	0.31**
	(0.13)	(0.13)	(0.13)
Party identification	0.08**	0.09**	0.08**
	(0.03)	(0.03)	(0.03)
Feelings towards blacks	− 0.01*	− 0.01*	− 0.01*
	(0.00)	(0.00)	(0.00)
Blame blacks for racial inequality	0.20***	0.13***	0.14***
	(0.02)	(0.03)	(0.03)
Economic individualism	− 0.00	0.02	− 0.01
	(0.02)	(0.03)	(0.02)
Equal opportunity opposition	0.04*	0.03	0.04 +
	(0.02)	(0.04)	(0.02)
Political expertise	0.13***	0.06	− 0.03
	(0.03)	(0.11)	(0.08)
Blame blacks for racial inequality		0.02**	0.02**
× Expertise		(0.01)	(0.01)
Economic individualism		− 0.01	
× Expertise		(0.01)	
Equal opportunity opposition		0.00	
× Expertise		(0.01)	
R^2	0.24	0.25	0.25
Standard Error of the regression	1.52	1.52	1.52
F Statistic	23.92***	18.60***	22.24***

$+ p < 0.10$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$.
Notes: Standard errors in parentheses. Number of cases, 694. African Americans excluded from sample.
Source: 1986 NES.

principles. All citizens appear to utilize underlying beliefs about racial inequality to inform their opinion on Affirmative Action.

Thirdly, the estimates show that economic individualism has no effect on Affirmative Action preferences in any of the models. Contrary to expectations, beliefs about the work ethic do not appear to influence Affirmative Action opinion for anyone. Fourthly, Table 3 shows that everyone relies the same on equality beliefs in rendering Affirmative Action preferences (interactive model 2: $b = 0.04$, $p < 0.06$). The equal opportunity coefficient is positive and significant in the additive model ($b = 0.04$, $p < 0.05$) and the interaction term is statistically indistinguishable from 0 in the fully specified interactive model

(interactive model 1: $b = 0.00$, $p < 0.45$). Thus, the more whites believe efforts to promote equal opportunity are unnecessary, the more likely they are to oppose Affirmative Action for blacks. More broadly, the Table 3 results demonstrate that everyone uses beliefs about racial inequality and equal opportunity to guide their Affirmative Action preferences, that the impact of racial beliefs on opinion is more pronounced at higher levels of expertise, and that no one uses beliefs about economic individualism.

The final test is in the area of gay rights (1992 NES data). The dependent variable is the extent to which respondents favour measures promoting equal rights for gays and lesbians in public and private spheres of activity. The indicator consists of responses to questions gauging support for laws to protect homosexuals from job discrimination, permitting homosexuals to serve in the armed forces and allowing homosexuals to adopt children (9-point scale; Cronbach's $\alpha = 0.74$). Higher scores reflect stronger opposition. The control variables are as follows. First, prior work shows that the highly religious are much more conservative on controversial social issues than the highly secular. Ordinal indicators of how literally people interpret the Bible and how frequently they attend church are thus included in the model; they should be positively related to opposition to gay rights.[37] Given the well-known social conservatism of southerners relative to non-southerners, a control variable for southern residence is included as well. It too should be positively related to gay rights opposition. The standard partisan and affect variables are part of the model. Given the party stands on the issue, Republicans should be more opposed to gay rights than Democrats. This will be indicated by a positive regression coefficient for the party identification variable. In contrast, and for obvious reasons, more positive feelings towards gays and lesbians (measured using the feeling thermometer score) should lead to less hostility to gay rights. This variable should thus be negatively related to anti-gay rights sentiment.

One core principle especially relevant to this issue is moral conservatism, which can be defined as a combination of beliefs about the importance of traditional family values and tolerating those who hold different moral standards.[38] This variable is measured using four items tapping beliefs about family values and moral tolerance; the indicator is coded such that higher scores correspond to increasing moral conservatism (16-point scale; Cronbach's $\alpha = 0.65$). Moral conservatism should be positively related to opposing gay rights, because the issue is likely seen by the morally conservative as threatening to traditional notions of morality. Next, beliefs about equal opportunity seem likely to affect opinions about whether or not gays and lesbians should enjoy the same rights as others. Therefore, the equal opportunity opposition variable is also included in the model (13-point scale; Cronbach's $\alpha = 0.65$). Because higher scores reflect more anti-egalitarian positions, this variable should

[37] David C Leege and Lyman A. Kellstedt, *Rediscovering the Religious Factor in American Politics* (Armonk, NY: M. E. Sharpe, 1993).

[38] Jon Hurwitz and Mark Peffley, 'Traditional versus Social Values as Antecedents of Racial Stereotyping and Policy Conservatism', *Political Behavior*, 14 (1992), 395–421.

TABLE 4 *Gay Rights Opposition, OLS Regression Estimates*

	Additive model	Interactive model 1	Interactive model 2
Constant	3.80***	5.31***	5.31***
	(0.31)	(0.47)	(0.47)
Church attendance	0.09*	0.08 +	0.08 +
	(0.05)	(0.05)	(0.05)
Biblical literalism	0.55***	0.51***	0.51***
	(0.11)	(0.11)	(0.11)
Southern resident	0.24*	0.22*	0.22*
	(0.12)	(0.12)	(0.12)
Party identification	0.12***	0.11***	0.11***
	(0.03)	(0.03)	(0.03)
Feelings towards gays and lesbians	− 0.05***	− 0.05***	− 0.05***
	(0.00)	(0.00)	(0.00)
Moral conservatism	0.15***	0.00	0.00
	(0.02)	(0.04)	(0.04)
Equal opportunity opposition	0.08***	0.07 +	0.07**
	(0.02)	(0.05)	(0.02)
Political expertise	0.04	− 0.41***	− 0.41***
	(0.04)	(0.12)	(0.11)
Moral conservatism × Expertise		0.05***	0.05***
		(0.01)	(0.01)
Equal opportunity opposition × Expertise		− 0.00	
		(0.02)	
R^2	0.49	0.50	0.50
Standard Error of the regression	2.01	2.00	2.00
F Statistic	145.75***	119.96***	133.40***

$+ p < 0.10$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$.
Notes: Standard errors in parentheses. Number of cases, 1,229. Weighted sample used.
Source: 1992 NES.

positively affect anti-gay rights sentiment. Finally, positive and statistically significant interaction terms will signify that the impact of these core beliefs on gay rights opposition is a positive function of expertise.

Table 4 contains the regression estimates. Starting with the control variables, as expected both church attendance and biblical literalism are positive and generally significant across the models, thereby suggesting that the more religious people are, the more likely they are to oppose gay rights. Also as expected, southern residence and Republican partisanship are positively related to such opposition as well, while those who feel more warmly towards homosexuals take the contrary position. Next, the results show a positive and statistically significant effect for moral conservatism in the additive model ($b = 0.15$, $p < 0.001$), and a positive and significant interaction effect in the fully interactive model (interactive model 1: $b = 0.05$, $p < 0.001$), suggesting

that everyone uses moral beliefs to guide position taking and that these links become stronger as expertise rises. The effect for moral conservatism in the final interaction model is statistically insignificant (interactive model 2: $b = 0.00$, $p < 0.46$), demonstrating that the least sophisticated, representing about 8 per cent of the sample, do not use moral beliefs on this issue. However, additional analysis revealed that at the next value of expertise (i.e. expertise = 1) the effect becomes significant. Therefore, most – but not all – citizens manifest evidence of deductive thinking in this case.[39] Finally, the estimates demonstrate that everyone uses egalitarian beliefs to guide their gay rights positions (interactive model 2: $b = 0.07$, $p < 0.01$), and that there is no propensity for the expertise to enhance the effect (interactive model 1: $b = -0.00$, $p < 0.49$). Overall, the results suggest once again that while political expertise can strengthen the relationship between core principles and specific preferences, a lack of expertise does not prevent people from making such connections.

CONCLUSION

I now summarize the principal findings and use this information to assess the explanatory performance of the two models. The presence of an expertise interaction effect was tested seven times across three policy domains. Significant effects were found for both economic principle interactions in the social welfare model, for the racial belief interaction in the Affirmative Action model and for the moral conservatism interaction in the gay rights model. Insignificant effects were found for the two economic principle interactions in the Affirmative Action model and for the equal opportunity interaction in the gay rights model. Significant effects, in short, obtain in four of the seven cases. The presence of significant effects across different policy domains and at different times indicates that the expertise interaction effect is real, while the failure of a more consistent pattern to emerge suggests that it is not very robust. Therefore, it seems reasonable to conclude that political expertise strengthens the relationship between core principles and policy preferences to a moderate degree. The results further demonstrate that most citizens are capable of drawing on core principles to guide their more specific issue positions. The additive effects and constituent variable estimates in the interactive models indicate that almost everyone can use core principles to render judgements about social welfare, Affirmative Action and gay rights. For every issue it was shown that the least informed segments of the public reason deductively about politics. Because this finding holds across issue space and over time, we can conclude that it is a generalizable effect that is not confined to one or two 'easy' issues. Therefore, while political expertise promotes deductive political reasoning, a lack of expertise does not preclude it. And while the performance of the unsophisticated does not approach that of the highly sophisticated, the fact that significant effects emerge for most citizens is critical.

[39] These results are available upon request from the author.

Overall, the results provide partial support for the two principal models of policy reasoning. The Expertise Interaction model correctly predicts that expertise enhances reliance on core principles, but it errs in predicting that the relatively uninformed cannot reason in this manner. The General Use model is wide of the mark in predicting that the impact of core principles on policy preferences is constant for all citizens, but it correctly predicts that most citizens use core principles to derive issue preferences. At the broadest level, it seems reasonable to conclude that citizens 'are able to categorise and to evaluate economically a wide variety of concrete policies on the basis of whether those policies are consistent with their more general postures'[40] and that political expertise can promote the 'effective translation of political predispositions into appropriate policy preferences'.[41]

These findings have important implications for understanding the role citizens can play in democratic political systems. Fifty years of survey research has demonstrated that ordinary citizens fall well short of the normative standards of democratic citizenship. Political scientists frequently disagree over the ability of people to overcome political apathy and ignorance to render meaningful political judgements. Some argue that citizens can overcome a lack of political knowledge by utilizing heuristic principles of judgement (including core beliefs and values) to deduce issue preferences, while others counter that the value of using heuristics to surmount knowledge gaps is overstated. The findings reported here are more consistent with the former perspective, because they suggest that a lack of political expertise does not prevent people from making sensible decisions. While most people are not terribly sophisticated about public affairs, they can turn to abstract beliefs and values to guide the positions they take on a wide range of social and political issues. Given the extensive historical documentation of how most people fall well short of the standards of democratic citizenship, the fact that they can reason deductively about the issues is no mean achievement.

APPENDIX: POLICY PREFERENCE, CORE PRINCIPLE AND POLITICAL EXPERTISE ITEMS

I. 1986 NES Sample

A. Social Welfare Preferences (Cronbach's $\alpha = 0.69$)

1. Some people think that the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel it is important for the government to provide many more services even if it means an increase in spending. And, of course, some other people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?
2. Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let

[40] Hurwitz and Peffley, 'How are Foreign Policy Attitudes Structured? A Hierarchical Model', p. 1104.

[41] Zaller, 'Information, Values, and Opinion', p. 1229.

TABLE A *Descriptive Statistics for the Core Principle, Political Expertise and Policy Preference Variables*

	Mean	Standard Deviation	Minimum	Maximum
1986 NES				
Economic individualism	13.70	4.04	0	24
Equal opportunity opposition	3.53	2.69	0	12
Blame blacks for racial inequality	9.48	3.63	0	16
Political expertise	2.87	2.11	0	8
Social welfare opposition	11.84	4.92	0	24
Affirmative Action opposition	4.52	1.72	0	6
1992 NES				
Moral conservatism	9.47	3.47	0	16
Equal opportunity opposition	2.92	2.55	0	12
Political expertise	2.86	1.64	0	6
Gay rights opposition	4.98	2.84	0	9

Note: Higher scores on the core principle and policy preferences variables reflect more conservative responses. Weighted sample used for 1992 NES.

each person get ahead on their own. Where would you place yourself on this scale, or haven't you thought much about this?

3. Some people feel that the government should make every effort to improve the social and economic position of blacks and other minority groups. Others feel that the government should not make any special effort to help minorities because they should help themselves. And of course, some other people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?
4. If you had a say in making up the federal budget this year, for which of the following programs would you like to see spending increased and for which would you like to see spending decreased? Should federal spending on [food stamps/programs that assist blacks/government assistance for the unemployed] be increased, decreased, or kept about the same?

B. Racial Policy Preferences (Tau $c = 0.43$)

1. Some people say that because of past discrimination blacks should be given preference in hiring and promotion. Others say that such preferences are wrong because it gives blacks advantages they haven't earned. What about your opinion – are you for or against preferential hiring and promotion of blacks? Do you [favour/oppose] preference in hiring and promotion strongly or not strongly?
2. Some people say that because of past discrimination it is sometimes necessary for colleges and universities to reserve openings for black students. Others oppose quotas because they say quotas give blacks advantages they haven't earned. What about your opinion – are you for or against quotas to admit black students? Do you [favour/oppose] quotas strongly or not strongly?

C. Economic Individualism (Cronbach's $\alpha = 0.60$)

1. Most people who don't get ahead should not blame the system; they have only themselves to blame.
2. Hard work offers little guarantee of success.
3. If people work hard they almost always get what they want.
4. Most people who do not get ahead in life probably work as hard as people who do.

5. Any person who is willing to work hard has a good chance of succeeding.
6. Even if people try hard they often cannot reach their goals.

D. Equal Opportunity (Cronbach's $\alpha = 0.61$)

1. Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed.
2. One of the big problems in this country is that we don't give everyone an equal chance.
3. If people were treated more equally in this country, we would have many fewer problems.

C. Political Expertise (Cronbach's $\alpha = 0.77$)

1–6. Political office held by George Bush, Caspar Weinberger, William Rehnquist, Paul Volcker, Robert Dole and Tip O'Neill
7. Party control of House.
8. Party control of Senate.

II. 1992 NES Sample

A. Gay Rights Preferences (Cronbach's $\alpha = 0.74$)

1. Do you favour or oppose laws to protect homosexuals against job discrimination? Do you [favour/oppose] such laws strongly or not strongly?
2. Do you think homosexuals should be allowed to serve in the United States Armed Forces or don't you think so? Do you feel strongly or not strongly that homosexuals [should/should not be] allowed to serve in the United States Armed Forces?
3. Do you think gay or lesbian couples, in other words, homosexual couples, should be legally permitted to adopt children? Do you feel strongly or not strongly that homosexual couples [should/should not] be legally permitted to adopt children?

B. Moral Conservatism (Cronbach's $\alpha = 0.65$)

1. The world is always changing and we should adjust our views of moral behaviour to those changes.
2. We should be more tolerant of people who chose to live according to their own moral standards, even if they are very different from our own.
3. The country would have many fewer problems if there were more emphasis on traditional family ties.
4. The new lifestyles are contributing to the breakdown of our society.

C. Equal Opportunity (Cronbach's $\alpha = 0.65$)

Same items as 1986 NES.

D. Political Expertise (Cronbach's $\alpha = 0.74$)

1–4. Political office held by Dan Quayle, William Rehnquist, Boris Yeltsin and Tom Foley.
5. Who has responsibility to decide constitutionality of laws?
6. Who nominates judges to the federal court?