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Policy Mood and Political Sophistication: Why Everybody Moves Mood

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This article presents evidence that both micro (individual level) and macro (aggregate level) theories of public opinion overstate the importance of political sophistication for opinion change. It is argued that even the least politically sophisticated segment of society receives messages about the economy and uses this information to update attitudes about political issues. To test this hypothesis, the authors have used General Social Survey data to construct a 31-item measure of policy mood, disaggregated by political sophistication, that spans from 1972 to 2004. They found that all the subgroups generally changed opinion at the same time, in the same direction, and to about the same extent. Furthermore, they show that groups at different sophistication levels change opinions for predominantly the same reasons.

During the last half century, political scientists have significantly modified their portrayal of political attitudes in the United States. Macro-level analyses of public opinion demonstrate that despite the inconsistent and uninformed attitudes of most citizens, aggregate public opinion behaves in systematic and coherent ways.[1] Furthermore, when aggregate public opinion changes, the government responds. Preferences for a more liberal or more conservative government yield policy shifts in the same direction.[2] The connection between public opinion, or 'Policy Mood', and policy change suggests impressive levels of representation in America. Erikson, MacKuen and Stimson show that the public's 'Mood' – an aggregate measure of the public's preferences for more or less government – influences all branches of US government.[3] Possibly even more striking than this opinion-policy linkage is the evidence that all sophistication levels update their Policy Mood in tandem.[4] Erikson, MacKuen and Stimson write, 'The better educated move more

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[1] Philip E. Converse, 'The Nature of Belief Systems in Mass Publics', in David E. Apter, ed., *Ideology and Discontent* (Ann Arbor: University of Michigan Press, 1964), pp. 206–61; Michael X. Delli Carpini and Scott Keeter, *What Americans Know About Politics and Why It Matters* (New Haven, Conn.: Yale University Press, 1996); Robert S. Erikson, Michael B. MacKuen and James A. Stimson, *The Macro Polity* (New York: Cambridge University Press, 2002); Benjamin I. Page and Robert Y. Shapiro, *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences* (Chicago: University of Chicago Press, 1992).

[2] Benjamin I. Page and Robert Y. Shapiro, 'Effects of Public Opinion on Policy', *American Political Science Review*, 77 (1983), 175–90; Page and Shapiro, *The Rational Public*; James A. Stimson, Michael B. MacKuen and Robert S. Erikson, 'Dynamic Representation', *American Political Science Review*, 89 (1995), 543–65; Erikson, MacKuen and Stimson, *The Macro Polity*.

[3] Erikson, MacKuen and Stimson, *The Macro Polity*; James A. Stimson, *Public Opinion in America: Moods, Cycles, and Swings* (Boulder, Colo.: Westview Press, 1991 and 1999).

[4] Erikson, MacKuen and Stimson, *The Macro Polity*, pp. 212–19; James A. Stimson, 'The Micro Foundations of Mood', in James H. Kuklinski, ed., *Thinking about Political Psychology* (Cambridge: Cambridge University Press, 2002), pp. 253–80.

than do others, but [opinion] movement seems to come from all strata of American society.'[5]

Evidence that the least sophisticated change opinions systematically and in concert with the most sophisticated segment of society challenges the dominant theories of public opinion. This finding even challenges Erikson, MacKuen and Stimson's theoretical expectations. They begin *The Macro Polity* by stating: 'Those at the low end of the [information] scale have little input on aggregate movement; those at the high end have major input. The net result is that the more informed, thoughtful, and attentive citizens contribute disproportionately to aggregate movement.'[6] This statement, while completely consistent with micro (individual) level and macro (aggregate) level theories of opinion change, contradicts their empirical findings of 'uniformity of preference change' across sophistication levels.[7] Page and Shapiro also find evidence that the most and least informed subgroups update their opinions in tandem. They note, the 'few differential trends among education groups suggests that individual differences in [message] exposure and acceptance, while theoretically interesting, may not ordinarily play a large part in the process of collective opinion change'.[8] Our goal is to examine the public's Policy Mood and explain why differences in exposure to and acceptance of political information do not influence opinion change.

In addition to being of theoretical interest, the question of who moves Mood – and why – is essentially about whom politicians represent when they respond to public opinion. Because Mood has been linked to shifts in public policy, we need to understand the ways that different subgroups contribute to the over-all trajectory of Mood. We begin by offering a brief overview of the opinion literature, which illustrates the incongruence between current opinion theory and Page and Shapiro's and Erikson, MacKuen and Stimson's finding of 'parallel publics'. We then outline a set of theoretical expectations that predict that all segments of the population receive common messages about the economy and then use this information to update their political attitudes. Although the most sophisticated will be more likely to incorporate additional information into their opinions, we expect to find similar patterns of opinion change and similar causal dynamics across sophistication levels. Our analysis proceeds in two parts. First, we replicate and extend Erikson, MacKuen and Stimson's findings to be sure that different sophistication levels indeed update their opinions in unison. We then test our hypothesis by evaluating the causal dynamics of opinion change for each sophistication level. The results strongly confirm expectations. The Mood of the most and least sophisticated segments of society generally changes at the same time, in the same direction, and for the same reasons. In contrast to the dominant literature on economic evaluations, we show that all sophistication levels translate economic ups and downs into their political attitudes.[9]

These findings offer three insights into the nature of public opinion change and representation in the United States. First, contrary to the theoretical expectations of micro and macro opinion scholars, the attitudes of the most and least sophisticated tend to change at the same time for the same reasons. Secondly, this finding suggests that the least

[5] Erikson, MacKuen and Stimson, *The Macro Polity*, p. 219.
[6] Erikson, MacKuen and Stimson, *The Macro Polity*, p. 5.
[7] Erikson, MacKuen and Stimson, *The Macro Polity*, p. 219.
[8] Page and Shapiro, *The Rational Public*, p. 316.
[9] Toke S. Aidt, 'Economic Voting and Information', *Electoral Studies*, 19 (2000), 349–62; George A. Krause and Jim Granato, 'Fooling Some of the People Some of the Time? A Test of Weak Rationality with Heterogeneous Information Levels', *Public Opinion Quarterly*, 62 (1998), 135–51.

informed contribute much more to aggregate opinion, and thus government response, than previously thought. Finally, the strong connection between the economy and Mood across sophistication levels suggests that simple economic messages have a profound effect on public opinion.

FROM MICRO TO MACRO: THE PUZZLE

The finding that all sophistication levels update their attitudes in a similar manner conflicts sharply with most public opinion literature.[10] Over half a century of scholarship shows that an individual's level of political sophistication affects his or her survey response and that large portions of the public fail to display any notion of ideology or attitude constraint.[11] Since these early works, public opinion scholars have continued to document the effects of political sophistication on public opinion.[12] Zaller's 'Receive–Accept–Sample' model of survey response, for example, places political sophistication central to both message reception and the likelihood of accepting the received message.[13]

According to Zaller: 'The greater the person's awareness, the greater his or her chances of receiving – that is, being exposed to and comprehending – a given change-inducing

[10] Political sophistication is a broad term in the political science literature. Robert C. Luskin, 'Explaining Political Sophistication', *Political Behavior*, 12 (1990), 331–61, p. 335, defines political sophistication as a function of three elements: (1) level of exposure to political information; (2) intellectual ability to retain and organize the encountered information; and (3) motivation to obtain and comprehend the political information. John R. Zaller, *The Nature and Origins of Mass Opinion* (New York: Cambridge University Press, 1992), p. 21, substitutes the term 'political awareness' for political sophistication but offers a similar definition. He writes, '*Political awareness* … refers to the extent to which an individual pays attention to politics *and* understands what he or she has encountered'. Conceptually we agree with these definitions of political sophistication. Operationally we are limited by the available time-series data. Education level and vocabulary score are the only available measures of political sophistication across time. Fortunately, a strong association exists between education level and political sophistication level (see Scott L. Althaus, *Collective Preferences in Democratic Politics* (Cambridge: Cambridge University Press, 2003), pp. 15–17. Philip E. Converse, 'Some Priority Variables in Comparative Electoral Research', in Richard Rose, ed., *Electoral Behavior: A Comparative Handbook* (New York: The Free Press, 1974), p. 730, concludes that education is 'probably *the* prime predictor of dependent variables reflecting political interest, participation, and mobilization'. R. Michael Alvarez and John Brehm, *Hard Choices, Easy Answers* (Princeton, N.J.: Princeton University Press, 2002), pp. 37 and 45, use education level as one of their measures of chronic information and political sophistication. Luskin, 'Explaining Political Sophistication', questions the causal relationship between education level and political sophistication but suggests that the correlation exists because of the strong relationship between education and intelligence, occupation and interest in politics.

[11] Angus Campbell, Philip E. Converse, Warren E. Miller and Donald E. Stokes, *The American Voter* (New York: Wiley, 1960); Converse, 'The Nature of Belief Systems in Mass Publics'; Paul F. Lazarsfeld, Bernard R. Berelson and Hazel Gaudet, *People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign*, 1st edn (New York: Columbia University Press, 1948).

[12] E.g. Larry M. Bartels, 'The American Public's Defense Spending Preferences in the Post-Cold War Era', *Public Opinion Quarterly*, 58 (1994), 479–508; Philip E. Converse, 'Assessing the Capacity of Mass Electorates', *Annual Review of Political Science*, 3 (2000), 331–54; Delli Carpini and Keeter, *What Americans Know About Politics and Why It Matters*; James N. Druckman, 'Does Political Information Matter', *Political Communication*, 22 (2005), 515–19; Saundra A. Schneider and William G. Jacoby, 'Elite Discourse and American Public Opinion: The Case of Welfare Spending', *Political Research Quarterly*, 58 (2005), 367–79; Paul M. Sniderman, 'The New Look of Public Opinion Research', in Ada W. Finifter, ed., *Political Science: The State of the Discipline II* (Washington, D.C.: The American Political Science Association, 1993), pp. 219–45; Paul M. Sniderman and John Bullock, 'A Consistency Theory of Public Opinion and Political Choice: The Hypothesis of Menu Dependence', in William E. Saris and Paul M. Sniderman, eds, *Studies in Public Opinion* (Princeton, N.J.: Princeton University Press, 2004), pp. 337–57; Zaller, *The Nature and Origins of Mass Opinion*.

[13] Zaller, *The Nature and Origins of Mass Opinion*.

message.'[14] In addition to being more likely to receive information, the most politically aware are best equipped to compare new information to their pre-existing predispositions and decide whether or not to accept that new information as correct. The relationship of political sophistication to message reception and resistance creates multiple potential expectations for opinion change. Depending on whether messages are conflicting or uniform, either the middle tier of sophisticates or the most sophisticated may be most likely to change survey responses. The least sophisticated, on the other hand, generally do not receive *any* information to use to update political attitudes. As Zaller explains,

> At the other end of the attentiveness spectrum is a larger group of people who possess almost no current information about politics. In late 1986, for example, when George Bush was halfway into his second term as vice-president of the United States, 24 percent of the general public either failed to recognize his name or could not say what office he held. People at this level of inattentiveness can have only the haziest idea of the policy alternatives about which pollsters regularly ask them to state opinions, and such ideas as they do have must often be relatively innocent of the effects of exposure to elite discourse.[15]

Thus, the RAS model is consistent with the expectation that the survey responses of the least sophisticated do not contribute to observed patterns of opinion change across time.[16]

Macro-level research extends this notion of the largely uninformed electorate to explain the micro–macro paradox – that is, why aggregate public opinion moves coherently even though individual opinion is largely unconstrained and uninformed.[17] This research argues that opinion change for the least sophisticated is mostly random and cancels out upon aggregation. As a result, the aggregate signal represents only the opinion change of the most sophisticated. Converse explains, '[T]he drawing of means hides a sea of noise in these placements, as aggregation always does. The signal extracted from this noise is very recognizable because it is undoubtedly shaped in large measure by the small minority of the electorate that is nearly as well informed about these matters as our elite informants.'[18] According to the macro scholars, if opinion change was disaggregated by sophistication level, the opinions of the most sophisticated would move systematically, the least sophisticated would be random movement, and the middle tier would be in between. As Erikson, MacKuen and Stimson conclude: 'We concur with the usual empirical assessments regarding the bleak distribution of political awareness, interest, and sophistication within the American electorate … Our claim instead is that macro-level dynamics are driven by an electorate, where in the aggregate, the more politically capable citizens possess dominant influence.'[19]

[14] Zaller, *The Nature and Origins of Mass Opinion*, p. 148.

[15] Zaller, *The Nature and Origins of Mass Opinion*, p. 16.

[16] It is important to note that in the rare instance when political messages are easy and ubiquitous – presidential elections may provide this type of message environment (see Philip E. Converse, 'Information Flow and the Stability of Partisan Attitudes', *Public Opinion Quarterly*, 26 (1962), 578–99; John Zaller, 'Floating Voters in U.S. Presidential Elections, 1948–2000', in Saris Willem E. and Paul M. Sniderman, eds, *Studies in Public Opinion: Attitudes, Nonattitudes, Measurement Error, and Change* (Princeton, N.J.: Princeton University Press, 2004)) – the RAS model predicts that the least informed will demonstrate the most responsiveness.

[17] Erikson, MacKuen and Stimson, *The Macro Polity*; Page and Shapiro, *The Rational Public*.

[18] Philip E. Converse, 'Popular Representation and the Distribution of Information', in John A. Ferejohn and James H. Kuklinski, eds, *Information and Democratic Processes* (Chicago: University of Illinois Press, 1990), pp. 369–88, at p. 382.

[19] Erikson, MacKuen and Stimson, *The Macro Polity*, p. 428–9.

INFORMATION STRATIFICATION AND OPINION DYNAMICS

As illustrated above, the overwhelming evidence that less sophisticated individuals are uninformed about politics and ideologically inconsistent in their survey responses (both cross-sectionally and across time) has led most opinion scholars to conclude that the least sophisticated do not receive or respond to messages that relate to their political attitudes. In contrast to the dominant theories of public opinion, Page and Shapiro and Erikson, MacKuen and Stimson have provided evidence of uniform opinion change.[20] We construct and test a theory of why the least politically sophisticated segment of society should change opinions roughly in tandem with the middle and most sophisticated individuals. Specifically, we argue that all segments of the electorate receive information about the economy and then use this information to update their political attitudes.

Research shows that Policy Mood, as a whole, responds to changes in the economy.[21] In the aggregate, individuals translate economic ups and downs into conservative and liberal attitudes towards government. Scholars dispute, however, the ability of the least sophisticated to receive economic messages and translate this information into political attitudes. Not only do individuals consistently describe the economy inaccurately, but the least educated also tend to make the most error prone assessments.[22] Sizeable evidence also suggests that the general public, especially the least sophisticated segment of the population, cannot accurately forecast economic changes.[23] Even Erikson, MacKuen and Stimson conclude: 'Political reactions based on the economy, for instance, are based on the collective information of those who do hold economic knowledge, not the unpredictability of uninformed actors responding in isolation.'[24]

Our emphasis, however, is not on specific economic assessments or forecasts. Using economic information to update political attitudes does not require attention to, or the ability to recall, specific details. We contend that all that is necessary is a vague notion of whether the economy is getting 'better' or 'worse'. In terms of identifying the ups and downs of the economy, an individual who can recall a variety of economic details has only a minimal advantage over a person who hears, in passing, that unemployment is down, or a person who notices that gas prices have increased, or even a person who notices that the cigarettes on the sidewalk have been smoked down to the butt.[25] DeBoef and Kellstedt

[20] Page and Shapiro, *The Rational Public*; Erikson, MacKuen and Stimson, *The Macro Polity*.

[21] Robert H. Durr, 'What Moves Policy Sentiment?' *American Political Science Review*, 87 (1993), 158–70; Erikson, MacKuen and Stimson, *The Macro Polity*.

[22] Aidt, 'Economic Voting and Information'; Pamela Johnston Conover, Stanley Feldman and Kathleen Knight, 'The Personal and Political Underpinnings of Economic Forecasts', *American Journal of Political Science*, 31 (1987), 559–83; Raymond M. Duch, Harvey D. Palmer and Christopher Anderson, 'Heterogeneity in Perceptions of National Economic Conditions', *American Journal of Political Science*, 44 (2000), 635–52; Thomas M. Holbrook and James C. Garand, 'Homo Economus? Economic Information and Economic Voting', *Political Research Quarterly*, 49 (1996), 351–75.

[23] Conover, Feldman and Knight, 'The Personal and Political Underpinnings of Economic Forecasts'; George A. Krause, 'Voters, Information Heterogeneity, and the Dynamics of Aggregate Economic Expectations', *American Journal of Political Science*, 41 (1997); 1170–200; George A. Krause and Jim Granato, 'Fooling Some of the People Some of the Time? A Test of Weak Rationality with Heterogeneous Information Levels', *Public Opinion Quarterly*, 62 (1998), 135–51.

[24] Erikson, MacKuen and Stimson, *The Macro Polity*, p. 447.

[25] In *Rolling Nowhere*, Ted Conover describes 'Steamtrain' Maury Graham, who claimed to be able to tell how the nation's economy was doing by the length of the cigarette butts he found on the sidewalk (see Ted Conover, *Rolling Nowhere: Riding the Rails with America's Hoboes* (New York: Viking Press 1984), p. 9).

show that individuals often over-estimate or under-estimate the state of the economy.[26] Nevertheless, all segments of the public should notice the ups and downs. Consistent with this expectation, Conover, Feldman and Knight and Parker-Stephen and MacKuen show that even when specific economic information is not retained, individuals demonstrate some capacity to absorb knowledge of the general trend.[27] Thus, while many studies have shown that the most sophisticated provide the most accurate economic assessments and forecasts, it is reasonable to expect that all segments of the public notice general increases and decreases in unemployment and inflation. Furthermore, the economy is a relatively easy cue or heuristic to use to update political attitudes; economic news is pervasive. There is no reason to expect that the least sophisticated rely on this heuristic less than the most sophisticated.

Importantly, our theoretical expectations do not preclude the possibility that the most sophisticated incorporate information beyond the economy into their political attitudes, or that they use economic information more effectively. Our contention is that the least sophisticated get enough economic information to update their Policy Mood. Before analysing this hypothesis, however, we need to explain why decades of individual level research show that individuals' survey responses are unconstrained cross-sectionally and across time if the dynamics of opinion change are the same across sophistication levels. Two considerations help to reconcile this conflict. First, to the extent that survey responses reflect primed or 'top of the head' considerations, individuals' survey responses may exaggerate ideological inconsistencies.[28] For example, suppose an individual is asked about spending preferences on a variety of domestic issues. If two of the responses reflect a recently primed consideration and the rest of the responses reflect the respondent's underlying attitude towards domestic spending, the fluctuation across responses will appear to be a lack of ideological constraint. A small number of unsystematic primed responses would make consistent underlying attitudes appear unconstrained. Secondly, the lack of correlation in individuals' survey responses across time may not be entirely the result of 'non-attitudes'.[29] In fact, evidence of systematic opinion change requires a correlation of less than $r = 1.0$ across time. Certainly, not all fluctuations in survey responses reflect systematic opinion change, but some of the longitudinal variance might. These ideas are not new; they stem directly from the logic of aggregation theory and macro opinion research.[30] We are simply extending this logic to show that individual level research may conceal the prevalence of systematic opinion change in the electorate. Subgroups are thus the focus of this analysis.

[26] Suzanna DeBoef and Paul M. Kellstedt, 'The Political (and Economic) Origins of Consumer Confidence', *American Journal of Political Science*, 48 (2004), 633–49.

[27] Pamela Johnston Conover, Stanley Feldman and Kathleen Knight, 'Judging Inflation and Unemployment: The Origins of Retrospective Evaluations', *Journal of Politics*, 48 (1986), 565–88; Evan Parker-Stephen and Michael B. MacKuen, 'Class Competence in the American Public' (paper presented at the Annual Meeting of the Midwest Political Science Association, 2005).

[28] Zaller, *The Nature and Origins of Mass Opinion*; John Zaller and Stanley Feldman, 'A Simple Theory of the Survey Response: Answering Questions and Revealing Preferences', *American Journal of Political Science*, 36 (1992), 579– 616.

[29] E.g. Converse, 'The Nature of Belief Systems in Mass Publics'.

[30] Page and Shapiro, *The Rational Public*; Erikson, MacKuen and Stimson, *The Macro Polity*.

RESEARCH DESIGN AND DATA

Before evaluating our hypothesis we first attempt to replicate Erikson, MacKuen and Stimson's and Stimson's findings that Mood changes in tandem across sophistication levels.[31] The Mood database used by Stimson contains 256 separate time-series indicators – comprising a total of 3,598 data points – that measure the public's domestic liberalism, or Mood.[32] Because the survey data become available to the scholarly community through sources like the Roper Center at the University of Connecticut, they almost always come as marginals – that is, the aggregated percentages that agree and disagree in the population as a whole. Since our aim is to subdivide the public according to levels of political sophistication, the fully aggregated data are not useful in the current context. Thus, no sub-aggregate analysis can use the full Mood database, and instead must look to alternatives.

Following Erikson, MacKuen and Stimson, we look to the General Social Surveys (GSS) data. Some of the longest series in the entire Mood database come from the GSS, which have been conducted on nearly an annual basis since 1972. Many of these items have been asked in over twenty of the GSS surveys. With the GSS cumulative file, obtaining time series for these indicators of Mood sub-aggregated by varying levels of sophistication becomes possible. Whereas analyses on fully aggregated data can begin in the vicinity of 1950, our analyses here will be limited to the period after 1972. For each stratum of the electorate, we are able to construct an index that reflects Mood using thirty-one items from the GSS, from 1972 to 2004.[33] The items, which are described in full in Appendix 2, vary rather substantially in their content, from an item about affirmative action, to items about taxes and helping the poor. The list, however, is dominated by the extensive and familiar battery of spending items, which ask the respondent to decide whether the government is spending too much, too little or about the right amount on particular policy issues like the environment, health care and assistance to blacks. For each of these spending-priorities items, the respondent is asked the following question stem:

> We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount.

The respondent is then presented with a list of government programmes or policy areas, and is asked his or her opinion about spending levels on each. In short, the GSS asked a sufficient variety of questions in a regular fashion over a three-decade span to make sub-aggregate analyses possible. None of the questions were asked every year, but many of them were asked over twenty times. Again, for details, the reader is referred to Appendix 2.

As a preliminary matter, to ensure that our GSS-based measure of Mood accurately mirrors Stimson's Mood series, we computed a GSS-based Mood index for the fully aggregated population. Following Stimson, we take the percentage giving a liberal answer and divide it by the percentage giving a liberal answer plus the percentage giving a

[31] Erikson, MacKuen and Stimson, *The Macro Polity*; Stimson, 'The Micro Foundations of Mood'.

[32] The database has been augmented since the 1999 publication date; Stimson, *Public Opinion in America*. These numbers refer to the most recent publicly available dataset, dated 21 June 2004.

[33] Because the vocabulary test was not administered in every year, analyses based on this criterion will span the years 1974–2004.

conservative answer. Then, using Stimson's dyadic ratios algorithm, we construct a fully aggregated GSS-based Mood index.[34] Our overall measure of Mood correlates with Stimson's measure at $r = 0.85$, which assures us that our GSS-based measure is capturing the same over-time movements as Stimson's broader Mood index.[35]

The next task, then, is to determine how to subdivide the electorate into varying levels of sophistication using the criteria available in the GSS. To measure political sophistication in the GSS for every year between 1972 and 2004, we need measures of sophistication in each of those years. The GSS has asked some questions about factual information – such as the name of the governor of the respondent's state, and the name of his or her representative in the US House – but only in the year 1987. We again follow the lead of Erikson, MacKuen and Stimson and rely on two complementary indicators that were asked more regularly and are surely correlated with any ideal measure of sophistication: educational attainment and the sum of a person's score on the GSS ten-item vocabulary test. For both variables, we have divided respondents in each year into three groups – high, middle and low. For educational attainment, we define 'high' as those respondents with a college diploma (or more); 'middle' as those with a high-school diploma, but not a college diploma; and 'low' as those who did not finish high school. For the vocabulary test, those with scores between 7 and 10 correct (out of 10) are considered 'high', those with 5 or 6 correct are 'middle', and those with 0 to 4 correct are 'low'.[36] After grouping respondents into these categories, following the same process as with overall Mood, we create a Mood index for each sophistication level.

FINDINGS, PART 1: WHO MOVES MOOD?

We are now equipped to replicate Erikson, MacKuen and Stimson's sub-aggregate analysis. Our measure of Mood adds twenty-one additional question items and extends their series by ten years, but the pattern of results confirms their findings. Figure 1 displays the series for the three categories of verbal ability.[37] Higher scores represent a more liberal public, and lower scores a more conservative one. The series are strikingly (though not perfectly) similar. Those familiar with the literature will recognize that, importantly, each series clearly resembles Stimson's Mood series (though, of necessity, the time periods under consideration are different). Each begins its trajectory headed in a conservative direction, and hits a conservative nadir near the end of the 1970s. But the 1980s witness a steady rebound towards a more liberal public, peaking at or near 1990. The early 1990s find something of a retreat in a conservative direction, hitting a conservative mini-peak around 1994, when President Clinton was rebuked in the mid-term elections. Subsequent years have produced a slowly but steadily more liberal public.

[34] The algorithm first scales each series to a common metric and then uses a factor analytic approach to extract the common variance among survey questions to create the overall index. See Stimson, *Public Opinion in America*, pp. 133–7, and < http://www.unc.edu/~jstimson > for complete documentation.

[35] Figure A1 in Appendix 1 compares our GSS-based Mood measure with Stimson's Mood measure. Consistent with the high correlation, the two series move together over time.

[36] Clearly, the dividing points for the vocabulary test are somewhat arbitrary. We chose these values after looking at the distributions of scores over the years. These points divided the public, roughly, into three equal parts and are most stable in terms of their sizes from year to year.

[37] To ensure that we are not creating an artificial stability where none truly exists, all of the figures and analyses in this article were conducted with the exponential smoothing feature of Stimson's algorithm turned off.

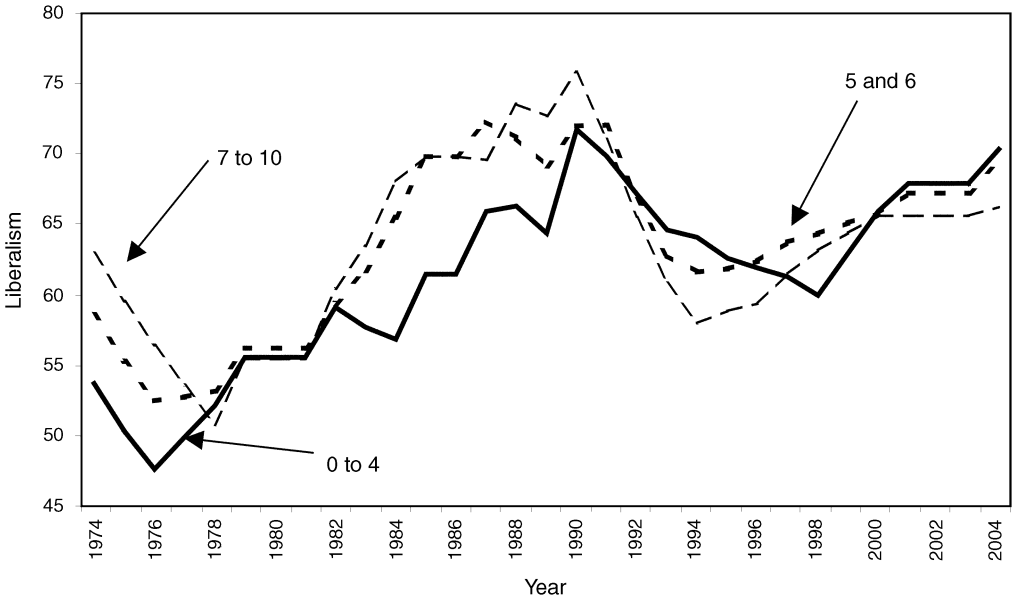

Fig. 1. Mood indices for three vocabulary strata, 1974–2004

TABLE 1 *Correlations Between Mood Indices for Three Vocabulary Substrata, 1974–2004*

	Vocabulary Score		
	0–4	5–6	7–10
Vocabulary score			
0–4	1.00		
5–6	0.88	1.00	
7–10	0.71	0.92	1.00

Note: All correlations have an $N = 31$, and all are statistically significant.

Table 1 shows the correlations between the three series, and the results there are consistent with our visual impressions. The strongest relationship ($r = 0.92$) is found between the two groups with the highest levels of verbal ability. The weakest correlation, though far from weak at $r = 0.71$, is between the highest and lowest groupings. Thus, instead of no movement or random movement as much public opinion literature predicts, we find – as did Erikson, MacKuen and Stimson – impressive levels of systematic movement among the least sophisticated. Our first impression, then, is that the ebbs and flows of a national Mood are not confined to the information elites or to those in the middle. When the tide of Mood moves, even the least sophisticated seem to contribute.

Again, consistent with Erikson, MacKuen and Stimson's findings, breaking the public down according to educational attainment produces a nearly identical outcome. The results of those analyses can be seen in Figure 2. As was the case with the different verbal ability

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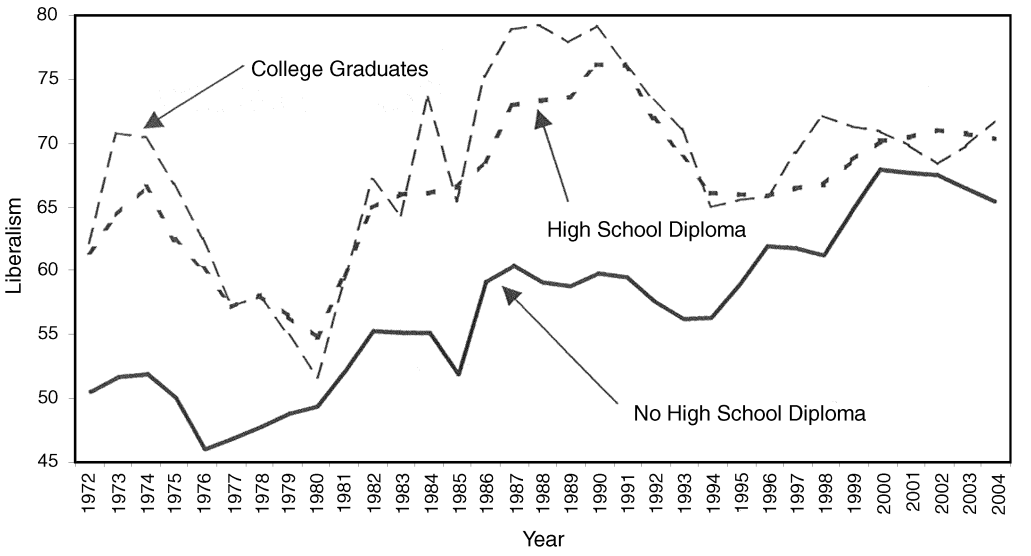

Fig. 2. Mood indices for three educational strata, 1972–2004

groupings, the policy attitudes of portions of the electorate with different educational attainment move roughly in tandem. The familiar pattern of a conservative nadir just before 1980 is there, as is the liberal peak around 1990, the brief conservatism until the mid-1990s, and the drift again towards liberalism near the end of the series. For those without a high school diploma, this pattern is least clear, but still visible. The two different indicators of political sophistication serve to validate one another, confirming Erikson, MacKuen and Stimson's conclusion that shifts in the electorate's Mood are a function of all segments of the electorate moving more or less in tandem.

Table 2 displays the correlations between the three series in Figure 2, and the findings mimic those in Table 1. The over-time correlation in Mood for the highest and middle education categories is $r = 0.92$, and the two series, visually, are virtually indistinguishable. The correlation drops substantially, however, when it involves those on the lowest end of the educational spectrum. Between the lowest and highest categories, their Mood indices correlate at $r = 0.58$; and between the lowest and middle categories, the correlation is $r = 0.73$. These correlations are still moderately strong by time-series standards, particularly considering that the most and least sophisticated only represent, on average, the top and bottom quintile of respondents. It is interesting to note that although the least sophisticated seem to have more attenuated movement than the other sophistication levels, this series shows sizeable over-time movement in the direction of a liberal trend. The least sophisticated appear to respond to some of the messages that the most sophisticated receive, as well as to other information that has pushed this group in a liberal direction over time.

The stronger relationship between the vocabulary series is most likely to be the result of the more equal distribution of the number of respondents in each subgroup. Although we hypothesize that all political sophistication levels update their opinions in response to common messages about the economy, it is not surprising that more similarities exist between the top third and bottom third of respondents than the top and bottom 20 per cent.

TABLE 2 *Correlations Between Mood Indices for Three Educational Substrata, 1972–2004*

	Educational attainment		
	No HS Diploma	HS Diploma	College Diploma
Educational attainment			
No HS Diploma	1.00		
HS Diploma	0.73	1.00	
College Diploma	0.58	0.92	1.00

Note: All correlations have an $N = 33$, and all are statistically significant.

The expectation that all sophistication levels use economic information to update their political attitudes does not preclude the possibility that the most sophisticated incorporate additional information. The finding does lead us, however, to focus on the educational substrata for the remainder of the analysis. As the differences between Figures 1 and 2 suggest, the smaller percentage of respondents in the top and bottom education subgroups provides a more robust test of our hypothesis.[38]

Before analysing the causal dynamics of Mood across sophistication levels, we must assess two critical assumptions of the analysis. First, the systematic opinion change among those with less than a high school degree, depicted in Figure 2, could result from aggregation. If the majority of the least sophisticated respondents provide stable or random responses, as aggregate opinion theory predicts, a few informed individuals in

[38] To further test the validity of using education as a measure of political sophistication we used eleven spending questions from the American National Election Surveys (ANES) to generate a second (biannual) measure of Mood from 1980 to 2004. Because the ANES asks respondents their education level and questions that reflect their political information level, it is possible to create and compare an ANES measure of policy Mood for the least educated and the least politically informed respondents. If the Mood of the least educated and the least politically informed correlate highly, we can be confident that there is significant overlap between these two subgroups, and using a measure of political information (if it was available) would not lead to different results from those obtained by using the education measure. However, if significant differences appear, we will have evidence that the opinions of education groups and political information groups move independently, indicating that education level may not be a valid proxy for political awareness level. First, we compare the ANES Mood measure with our GSS Mood measure to ensure that the two aggregate measures both capture the public's 'Mood'. The two series correlate at $r = 0.88$, suggesting that the two measures indeed capture the same concept. Next, we group ANES respondents by education and political information level. Following Zaller, *The Nature and Origins of Mass Opinion*, we create a thirteen-point index of political information based on: correctly identifying which political party controls the House, which party controls the Senate, and correct (relative) placement of the parties on defence spending, government service, aid to blacks, liberal/conservative scale, guaranteed jobs and health care (see Appendix 2 for question wording). Each correct response is coded as a 1. Respondents could also get 5 points based on the interviewer rating of respondent's level of political information. Although the biannual nature of the ANES does not permit time-series regression analysis, we can now compare the Mood of the least educated (those with less than a high school degree) with the Mood of the least politically informed. The percentage of respondents with less than a high school degree decreased over time, so each year we match the percentage or respondents who are 'politically uninformed' as closely as possible to the percentage with less than a high school degree. From 1980 to 2000, the Mood of the least educated and the least politically informed correlate at $r = 0.87$. The two measures of sophistication – education and political information – are not one-and-the-same, but the similarities are clear. The high correlation suggests that education level is indeed a valid measure of political sophistication.

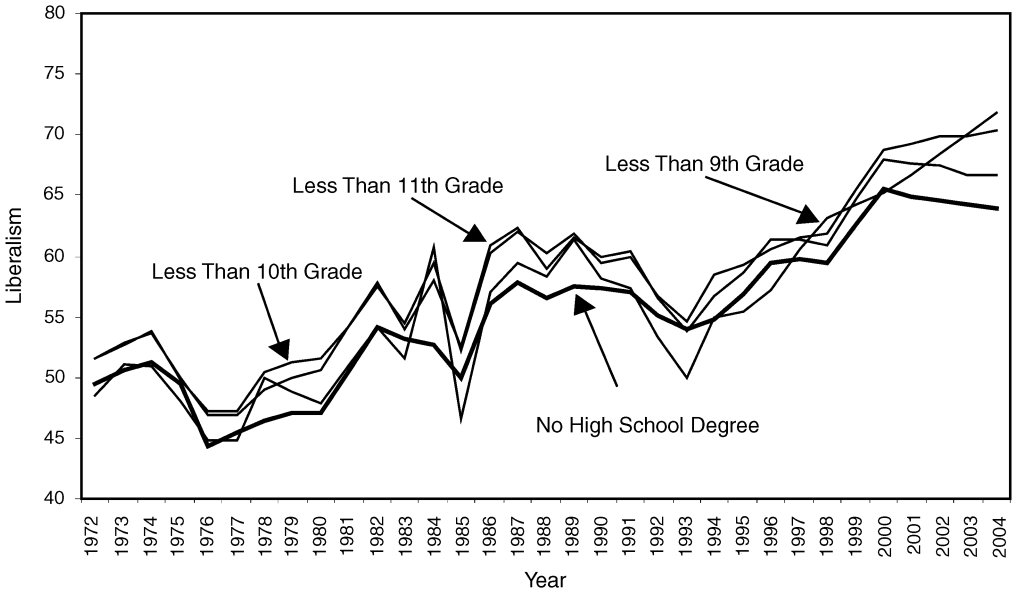

Fig. 3. Mood indices for those with less than a high school degree, less than eleventh grade, less than tenth grade, and less than ninth grade, 1972–2004

this subgroup could produce the systematic movement we observed.[39] Our theoretical expectations, however, predict that instead of a few informed individuals emerging from a 'sea of noise' nearly all individuals receive and respond to economic messages.[40] To test this expectation we further disaggregate Mood by education level. The GSS reports the highest school grade level completed for each respondent. This variable allows us to create a measure of Mood for each grade level. Figure 3 depicts the Mood of those with less than a high school degree, as well as those who did not complete eleventh, tenth and ninth grade. The similarity across series is astonishing. The subgroup including only those who did not complete the ninth grade is less than half the size of the group of those who did not complete high school. Yet, the two series follow virtually the same trajectory.

Table 3 examines the correlations between series all the way to those respondents who did not complete sixth grade. The table also shows the percentage of respondents in each education grouping. It is not until we analyse respondents with less than a sixth grade education – just 1.9 per cent of respondents – that the correlations substantially drop. It is simply wrong to conclude that the opinion movement of the least sophisticated results from a few informed respondents amidst mostly random responders. Although some unsophisticated individuals certainly offer random responses, the 'sea of noise' that Converse describes, does not begin to emerge until we analyse less than 2 per cent of all respondents.

A second assumption that we must test is the underlying structure of survey items across sophistication levels. It is possible that the multi-item measure of Mood masks different

[39] Converse, 'Popular Representation and the Distribution of Information'; Page and Shapiro, *The Rational Public*; Erikson, MacKuen and Stimson, *The Macro Polity*.

[40] Converse, 'Popular Representation and the Distribution of Information', p. 382.

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TABLE 3 *Correlations Between Mood Indices by Grade Level, 1972–2004*

	Educational level less than:						
Education level (% of respondents)	H.S.	11th	10th	9th	8th	7th	6th
Less than High School (21.9%)	1						
Less than 11th Grade (17.2%)	0.98	1					
Less than 10th Grade (12.5%)	0.97	0.9	1				
Less than 9th Grade (9.1%)	0.94	0.96	0.98	1			
Less than 8th Grade (4.5%)	0.93	0.94	0.94	0.94	1		
Less than 7th Grade (3.1%)	0.89	0.87	0.91	0.94	0.9	1	
Less than 6th Grade (1.9%)	0.51	0.48	0.42	0.37	0.46	0.4	1

Note: All correlations have $N = 33$, and all are statistically significant.

opinions between the subgroups across policy areas. For example, if the most sophisticated favour spending more money on education and the environment while the least sophisticated favour increased spending on welfare and helping the sick, both series would rise at the same time, but for different reasons. If the different sophistication levels move in tandem, in a causal sense, we should see specific question items loading onto each index in a similar manner for each level of political sophistication. Table 4 analyses this expectation by comparing how individual question responses made by individuals in each subgroup load onto the overall measure of Mood for that subgroup. In order to keep comparisons of the correlations as similar as possible, only the questions asked fifteen times or more are included in the table.

A surprising, but interpretable pattern emerges in Table 4. First, notice that the common variance explained (i.e., the percentage of the variance that is common across question items, see bottom line of Table 4) is similar across subgroups (the range is 35 to 40 per cent; Stimson has consistently found values just below 40 per cent). More importantly, for the top thirteen of the twenty items the correlations across subgroups are similar, suggesting that the same policy issues load onto each subgroup's Mood in a comparable way. In the remaining third of the items we see negative correlations and differences across subgroups. What is interesting about these seven items is that, with the exception of 'space exploration', they all correspond with Stimson's second dimension of Mood.[41] It appears that the first dimension of Mood reflects the same underlying policy attitudes for each sophistication level. The second dimension of Mood, which Stimson characterizes as representing attitudes towards crime and criminals and social issues, like helping those in need, may reflect different underlying ideologies across subgroups.

What the table shows, for the first time, is some evidence of ideology, albeit of the macro flavour, at the lowest end of the sophistication spectrum. The combined results of these figures and tables stand in contrast to decades of individual-level research that documented the absence of ideological thinking – or even political thinking at all – among the non-elite

[41] Stimson, *Public Opinion in America*, p. 71; Erikson, MacKuen and Stimson, *The Macro Polity*, p. 208. The eleven question items asked in less than fifteen years follow the same first and second dimension patterns but, as we would expect, the shorter series show much more variability. Four items have similar coefficients across sophistication levels, matching the pattern in the top section of Table 3. For four items the coefficients of the middle and highest sophistication levels load differently from the least sophisticated and for three of the items the least and middle sophistication levels load similarly, and the most sophisticated are distinct.

TABLE 4 *Correlations Between Survey Items and Mood Indices, by Sophistication Level, 1972–2004*

Survey item	Years asked	Level of sophistication		
		Lowest	Middle	Highest
Improve nation's educ. system	24	**0.84**	**0.68**	**0.84**
Solve problems of big cities	24	**0.73**	**0.72**	**0.70**
Protect environment	24	**0.67**	**0.72**	**0.86**
School busing	17	**0.94**	**0.73**	**0.67**
Taxes	18	**0.72**	**0.66**	**0.63**
Help the sick	15	**0.47**	**0.89**	**0.54**
Military and defence	24	**0.25**	**0.58**	**0.65**
Housing discrimination	17	**0.82**	**0.69**	**0.44**
Affirmative action	15	**0.18**	**0.48**	**0.36**
Gun permits	22	**0.69**	**0.59**	**0.47**
Welfare	24	**0.57**	**0.75**	**0.85**
Improve nation's health	24	**0.61**	**0.82**	**0.82**
Improve conditions of blacks	24	**0.72**	**0.87**	**0.93**
Capital punishment	23	−0.10	−0.24	−0.28
Courts and criminals	25	0.71	0.19	−0.01
Space exploration programme	24	0.58	0.29	−0.06
Special help to blacks	16	−0.15	0.48	0.49
Solve problems	16	−0.54	0.60	0.47
Reduce diff. between rich/poor	17	−0.26	0.76	0.65
Help the poor	16	−0.68	0.64	0.69
% of all (31) indicator var. expl.		35	40	37

Note: Sophistication level refers to those not receiving a high-school diploma, those receiving a high-school diploma but not a college diploma, and those receiving a college diploma or higher. For precise question wordings, see Appendix 2.

portions of the mass public. Similarly, the expectations of many researchers in the macro tradition do not hold. The least sophisticated, far from cancelling out or producing random noise, show systematic opinion change across time.

FINDINGS, PART 2: ARE THE CAUSAL PROCESSES DIFFERENT?

The visual displays of apparently similar time series have produced impressive results. Despite overwhelmingly low levels of political knowledge in the American electorate the most and least politically sophisticated seem to change opinions in tandem.[42] Furthermore, we have shown that this pattern of opinion change among the least sophisticated is not a result of aggregating across issues or respondents. A more direct test of our hypothesis, however, is to assess whether the similarity of sub-aggregated opinion movements results because these different series have common causal dynamics. Erikson, MacKuen and Stimson model Mood (not disaggregated) as a function of inflation and yearly shifts in the unemployment rate.[43] Increases in the unemployment rate tend to fuel demand for

[42] Delli Carpini and Keeter, *What Americans Know About Politics and Why It Matters*.
[43] Erikson, MacKuen and Stimson, *The Macro Polity*, chap. 6.

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TABLE 5 *The Causal Dynamics of Mood, by Level of Sophistication, 1972–2004*

	1956–96 All	1972–2004 All	SUR Model 1972–2004		
			No HS dip.	HS dip.	College dip.
Dynamics	0.38*	0.72*	0.79*	0.76*	0.6*
	(0.14)	(0.12)	(0.10)	(0.08)	(0.11)
Inflation	− 0.78*	− 0.49*	− 0.43*	− 0.45*	− 0.79*
	(0.21)	(0.23)	(0.25)	(0.20)	(0.33)
Change in unemployment	1.10*	1.54**	1.16	1.83*	2.19**
	(0.48)	(0.95)	(1.0)	(0.85)	(1.49)
Constant	41.57*	21.30*	14.30*	18.62*	31.4*
	(9.34)	(8.66)	(6.75)	(6.2)	(8.29)
Adj. R^2	0.58	0.84	0.89	0.85	0.67
N	41	32	32	32	32

Note: Standard errors are in parentheses; $*p < 0.05$, $**p < 0.1$

government activism, and inflationary pressures produce the opposite reaction, with a demand for government belt-tightening. We expect the same statistical relationships between Mood and the economy at all levels of sophistication. Recent research suggests that all citizens, and thus all strata of society, have incentives to pay attention to economic indicators.[44] Additionally, the cognitive requirements of noticing whether the economy is getting better or worse are minimal. Although only the most sophisticated evaluate and forecast the economy with precision, nearly all individuals should notice economic ups and downs. The wealthy and highly educated may get their economic information from different sources than the less educated do, but all portions of society should receive and respond to changes in objective economic messages.

Table 5 begins with Erikson, MacKuen and Stimson's findings on the effects of inflation and unemployment on overall Mood, 1956–96.[45] In column two, we report the effects of inflation and unemployment on our GSS-based measure of Mood, not subdivided by sophistication.[46] We do this to ensure that the subsequent results are as comparable to theirs as possible. These fully aggregated results provide confirmation that our measure of Mood parallels the Mood measure used by Erikson, MacKuen and Stimson. Despite the shortened time series, and thus higher standard errors, all coefficients are statistically significant and of relatively similar magnitude to Erikson, MacKuen and Stimson's analysis.

[44] Parker-Stephen and MacKuen, 'Class Competence in the American Public'.

[45] Erikson, MacKuen and Stimson, *The Macro Polity*, Table 6.4. Because the hypotheses posit directional predictions we use one-tailed tests.

[46] Tests for stationarity on these time series were inconclusive. In particular, when using the Augmented Dickey–Fuller test, we are unable to reject the null of a unit root; by contrast, when using the Kwiatkowski, Phillips, Schmidt and Shin test, we are unable to reject the null of level stationarity (see Denis Kwiatkowski, Peter C. B. Phillips, Peter Schmidt and Yongcheol Shin, 'Testing the Null Hypothesis of Stationarity against the Alternative of a Unit Root', *Journal of Econometrics*, 54 (1992), 159–78). Such findings should not be surprising with time-series as short as these, as both the ADF and KPSS tests have low power against the alternative hypothesis. In the face of such contradictory results, we opt to treat the series as stationary, which is the way that all previous analysts, including Erikson, MacKuen and Stimson (*The Macro Polity*), have treated these series.

We are most interested, however, in whether economic changes influence Policy Mood similarly for all sophistication levels. We expect that the relationship between the economic indicators and Policy Mood will be in the same direction and statistically significant for each subgroup. Similar relationships will provide evidence that the most, middle and least sophisticated receive and understand messages about inflation and unemployment, and then update their attitudes towards government in tandem.

To examine the relationship between the economy and Mood, we estimate the three regression equations (one for each sophistication level) jointly in a Seemingly Unrelated Regression Equations (SUR) model.[47] Given that the series come from the same surveys, we expect contemporaneous correlation in the disturbance terms across equations. The SUR model estimates this expected correlation – incorporating information that is unavailable in separate regressions – and thus produces more efficient estimates. Binkley and Nelson demonstrate that efficiency gains persist even when variables are correlated across equations, giving further evidence that the SUR model is the most efficient estimator of our set of equations.[48]

Consistent with expectations, the last three columns of Table 4 show remarkably similar causal dynamics across sophistication levels. At each sophistication level the coefficients are all in the expected directions; inflation is associated with a more conservative Mood and increased unemployment with a more liberal Mood. Furthermore, the negative relationship between increased inflation and a more liberal policy Mood is statistically significant for the least, middle and most sophisticated. Even those without a high school diploma translate price increases into more conservative political attitudes. Also as expected, each sophistication level appears to translate increases in the unemployment rate into more liberal political attitudes. Although the relationship between unemployment and Mood for the least sophisticated is not statistically significant ($p = 0.12$), cross-equation tests for equality confirm the similar nature of all of the coefficients. In no case were the cross-equation differences statistically significant. While we need to be cautious about concluding that all sophistication levels translate unemployment changes into political attitudes in a uniform manner, the lack of statistically significant differences across sophistication levels greatly challenges the notion that aggregate public opinion only reflects the 'small minority of the electorate that is nearly as well informed … as our elite informants'.[49]

[47] Arnold Zellner, 'An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias', *Journal of the American Statistical Association*, 57 (1962), 348–68; Arnold Zellner, 'Estimators for Seemingly Unrelated Regression Equations: Some Exact Finite Sample Results', *Journal of the American Statistical Association*, 58 (1963), 977–92.

[48] James K. Binkley and Carl H. Nelson, 'A Note on the Efficiency of Seemingly Unrelated Regression', *American Statistician*, 42 (1988), 137–9. As might be expected, due to the small disturbance terms, estimating the equations individually produces nearly identical results. When the equations are estimated in separate regressions, all statistically significant relationships remain significant at $p < 0.10$ or less.

[49] Converse, 'Popular Representation and the Distribution of Information', p. 382. To be certain that our findings do not result because of the specific items in our Mood index, we re-ran the analysis with several different Mood specifications. One potential concern is respondent redundancy between similarly worded spending questions in years when the GSS introduced new question wording. To account for this concern we re-estimated the Mood measure omitting the 'Y' version of each spending question. The results of the analysis were nearly identical, with all significant relationships remaining consistent at $p < 0.10$ or less. We also ran the analysis using the Mood measure used by Ellis, Ura and Robinson, which includes only eleven spending items (see Christopher R. Ellis, Joseph Daniel Ura and Jenna Ashley Robinson, 'The Dynamic Consequences of Nonvoting in American National Elections', *Political Research Quarterly*, 59 (2006), 227–33). With this specification all relationships

The similar causal dynamics across sophistication levels, particularly the response to inflation, confirms our expectation that all segments of the population translate economic information into political attitudes. It is necessary, however, to examine the magnitude and immediacy of these effects. As expected, the lagged dependent variables (Dynamics) are all statistically significant. Importantly, the coefficient for the lagged dependent variable is strongest for the least sophisticated. Considering that in a partial-adjustment (or Koyck) model such as this, the lagged dependent variable represents the omitted effects of previous lags of the independent variables – inflation and unemployment in this case – this finding makes opinion of the least educated seem more inertial, slowest to respond to shifts in the economy. By contrast, the smaller coefficient for the lagged dependent variable for the middle stratum, and the smallest still for the highest stratum – and the larger coefficients for the immediate impacts of the economic variables – suggest that opinion of the relatively more sophisticated responds more rapidly to the dynamics of the economy. It appears that the immediate influence of inflation and unemployment on Mood are weakest for the least sophisticated stratum of American society, but their effects (because of strong dynamics) continue to appear in subsequent time periods. In these models, the *total* effect of a variable is equal to the immediate influence divided by one minus the lagged dependent variable. In this light, the total effects for a one-point shift in inflation become almost identical across the three levels of sophistication. For the least sophisticated, the total effect is a 2.05 (i.e., $-0.43/(1-0.79)$) point conservative shift in Mood. For the middle stratum, the cumulative effect is 1.88 points, and for the top stratum it is 1.98 points. What this means, for inflation at least, is that shifts in the economy produce nearly identical total effects across all sophistication strata of the public. These effects take longer to work their way through for the least sophisticated, and they happen most quickly among the most sophisticated, but their total effect is nearly the same.

For shifts in unemployment, where the differences in the immediate-impact coefficients are larger, the total influence of the variables differs more as well. Among the least sophisticated, the total influence of a one-point increase in unemployment is a 5.52 (i.e., $1.16/(1-0.79)$) point shift towards liberalism. Among the middle segment, the total influence is a bit larger, 7.63 points. And for the most sophisticated, the total is a 5.48 point shift towards liberalism. As with inflation, for the most sophisticated a larger portion of the total influence of changes in unemployment comes immediately. For the least sophisticated, the changes take longer to affect Mood.[50]

The most sophisticated incorporate economic changes more quickly into their political attitudes than the least sophisticated, but statistically speaking, and in terms of total effect, the influence of economic changes on political attitudes is remarkably similar across sophistication levels. The finding that the upper tier of sophisticates has a similar causal structure to overall Mood is not at all surprising; in fact, it is precisely what micro and macro public opinion theories predict. Similarly, the movement of the middle tier shows that elements of Zaller's RAS model find support. But instead of following a 'white noise' pattern that might represent 'aggregate non-attitudes' as the macro scholars and the RAS

(F'note continued)
remained significant and Change in Unemployment became significant for the least sophisticated. The consistent pattern of results suggests that the analysis is not sensitive to the particular question items included in the Mood index.

[50] Consistent with our rationale for using the SUR framework, the residuals are strongly correlated across equations. However, with respect to autocorrelation, Breusch–Pagan LM tests performed separately on each equation show no clear evidence of autocorrelation.

model predict, opinion at the lowest level follows much the same patterns – with understandable differences – as opinion at highest levels of political sophistication.

IMPLICATIONS AND CONCLUSIONS

Images of highly informed individuals dominating public opinion are deeply entrenched in political science. Converse recently concluded that, 'those poorly informed tend to suffer at least partial disenfranchisement'.[51] This analysis, however, confirms Erikson, MacKuen and Stimson's finding that all sophistication strata contribute to aggregate shifts in Policy Mood.[52] For each sophistication group, opinion dynamics visually share much in common. We also show, for the first time, that the commonalities of Mood do not result because of a few systematic responses amidst a sea of noise or because Mood aggregates across issues. Most importantly, however, we find that across the three tiers of sophistication, Mood is a function of the same broad causal processes. Even the least sophisticated receive and respond to objective economic indicators. Together, these findings suggest that the least sophisticated contribute much more signal and much less noise to Mood than previous theories of opinion change predict.

Can these results be reconciled with micro findings and macro predictions that the politically sophisticated dominate opinion change, while the opinions of the least sophisticated remain constant or contribute only random noise?[53] We believe they can be. The evidence presented in this article suggests that the least sophisticated receive the same general messages (at least about the economy) as the most sophisticated, and use this information to update their opinions in the same way. It is still possible, maybe even probable, that the most sophisticated incorporate more information than the least sophisticated, at least in a statistical sense. And our results show that the most sophisticated incorporate information more quickly, while the least sophisticated incorporate it the least quickly. This finding suggests that political sophistication does indeed influence message reception, resistance and accessibility.[54] Substantively, however, the extra information that political sophisticates receive and the increased likelihood of message reception, resistance and accessibility contributes very little to the variance in Policy Mood. In other words, this analysis does not negate previous findings that opinion change and attitude stability vary by political sophistication. The findings, instead, provide evidence for Page and Shapiro's supposition that despite such variations, there are broad messages that eventually reach all segments of society, and the responses to these broad messages move public opinion.[55]

There are also implications for representative democracy in these findings. The over-time movements in public opinion have been connected to shifts in policy outcomes, both indirectly (through elections) and directly.[56] The opinion constructs considered in those analyses have always been aggregated to the entire electorate, and appropriately so,

[51] Philip E. Converse, 'Assessing the Capacity of Mass Electorates', *Annual Review of Political Science*, 3 (2000), 331–54, p. 387.

[52] Erikson, MacKuen and Stimson, *The Macro Polity*.

[53] Zaller, *The Nature and Origins of Mass Opinion*; Bartels, 'The American Public's Defense Spending Preferences in the Post-Cold War Era'; Converse, 'Popular Representation and the Distribution of Information'; Converse, 'Assessing the Capacity of Mass Electorates'; Erikson, MacKuen and Stimson *The Macro Polity*.

[54] Zaller, *The Nature and Origins of Mass Opinion*.

[55] Page and Shapiro, *The Rational Public*.

[56] Stimson, MacKuen and Erikson, 'Dynamic Representation'; Erikson, MacKuen and Stimson, *The Macro Polity*, chap. 8.

given the subject matter. The findings in this article help to shed some additional light on the notion of precisely whose preferences are being represented in policy making. The answer may not quite be 'everyone's', but it is far closer than the previous literature expects. For Policy Mood at least, it is incorrect to describe the survey responses of any segment of the public as 'non-attitudes' or 'a sea of noise'.

Of course, this article leaves many questions unaddressed. Primary among them is whether there are inter–relationships among the various strata of sophistication. We saw in Tables 1 and 2 that the time paths of the different groups are strongly correlated, but our data are annual. Could it be that an analysis based on quarterly data would reveal that those at the top of the information hierarchy are actually leading – that is, causing – the opinion movements of those further down the pecking order?[57] Differentiated response rates would not change our findings. The least sophisticated still receive and respond to messages; but this pattern would qualify the rather optimistic conclusions above about the democratic process. Alternatively, are all strata following the common message of the economy blindly? There are times during economic upswings when continued or increased government spending would be advisable. Not even political sophisticates, however, appear to make such distinctions in their attitudes towards government. These subtleties are the focus of future research.

APPENDIX 1: COMPARISON OF MOOD MEASURES

Figure A1, below, compares the 31-item Mood index used in our analyses with Stimson's (1991, 1999) measure of Mood. The visual similarities combined with the correlation of $r = 0.85$, suggest that the two series are indeed measuring the same broad concept of public policy mood.

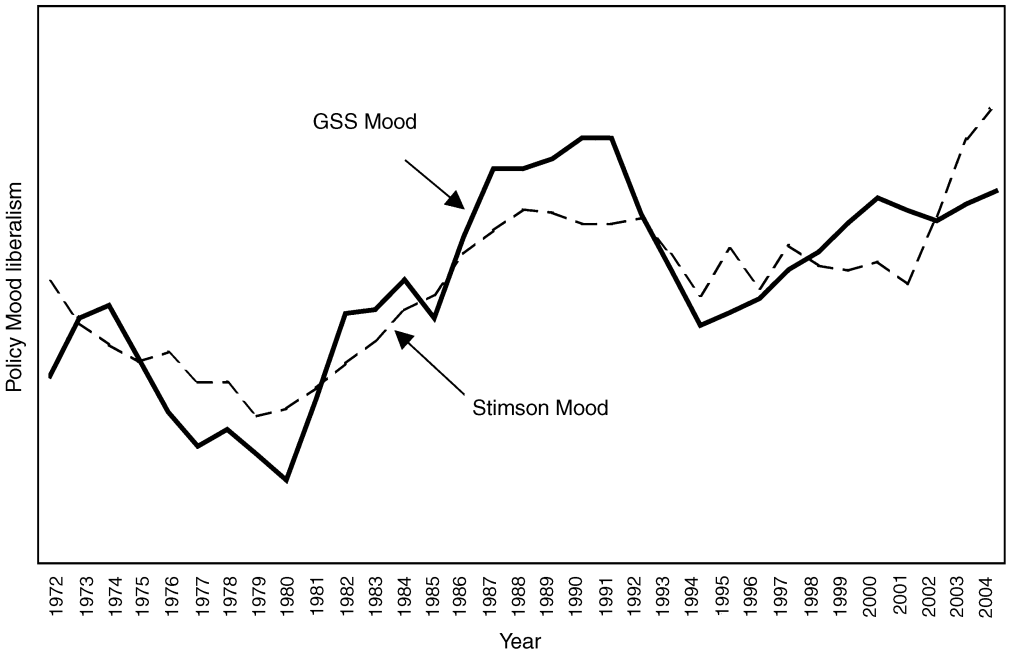

Fig. A1. Comparison of Stimson's Mood with 31-item GSS Mood Index, 1972–2004

[57] At least with GSS data, such an analysis is not possible, as their surveys occur the same time every year.

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APPENDIX 2: QUESTION WORDING

GSS Mood Index Questions

AFFRMACT $N = 15$ Some say that because of past discrimination, blacks should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of blacks is wrong because it discriminates against whites. What about your opinion – are you for or against preferential hiring and promotion of blacks? If favors: Do you favor preference in hiring and promotion strongly or not strongly? If opposes: Do you oppose preference in hiring and promotion strongly or not strongly?

BUSING $N = 17$ In general, do you favor or oppose the busing of (Negro/Black/African American) and white school children from one school district to another?

CAPPUN $N = 23$ Do you favor or oppose the death penalty for persons convicted of murder?

COURTS $N = 25$ In general, do you think the courts in this area deal too harshly or not harshly enough with criminals?

EQWLTH $N = 17$ Some people think the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and poor. Here is a card with a scale from 1 to 7. Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel?

GUNLAW $N = 22$ Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun?

HELPBLK $N = 16$ Some people think that (Blacks/Negroes/African Americans) have been discriminated against for so long that the government has a special obligation to help improve their living standards. Others believe that the government should not be giving special treatment to (Blacks/Negroes/African Americans). Where would you place yourself on this scale, or haven't you made up your mind on this?

HELPNOT $N = 16$ Some people think that the government in Washington is trying to do too many things that should be left to individuals and private businesses. Others disagree and think that the government should do even more to solve our country's problems. Still others have opinions somewhere in between. Where would you place yourself on this scale, or haven't you made up your mind about this?

HELPPOOR $N = 16$ I'd like to talk with you about issues some people tell us are important. Some people think that the government in Washington should do everything possible to improve the standard of living of all poor Americans; they are at point 1 on this card. Other people think it is not the government's responsibility, and that each person should take care of himself; they are at point 5. Where would you place yourself on this scale, or haven't you made up your mind on this?

HELPSICK $N = 16$ In general, some people think that it is the responsibility of the government in Washington to see to it that people have help in paying for doctors and hospital bills. Others think that these matters are not the responsibility of the federal government and that people should take care of these things themselves. Where would you place yourself on this scale, or haven't you made up your mind on this?

RACOPEN $N = 17$ Suppose there is a community-wide vote on the general housing issue. There are two possible laws to vote on. One law says that a homeowner can decide for himself whom to sell his house to, even if he prefers not to sell to Negroes/Blacks/African Americans. The second law says that a homeowner cannot refuse to sell to someone because of their race and color. Which law would you vote for?

TAX $N = 18$ Do you consider the amount of federal income tax which you have to pay as too high, about right, or too low?

Spending stem: We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether

you think we're spending too much money on it, too little money, or about the right amount. Are we spending too much, too little, or about the right amount on:

NATARMS $N = 24$ the military, armaments, and defense?

NATARMSY $N = 15$ national defense?

NATCITY $N = 24$ solving the problems of big cities?

NATCITYY $N = 15$ assistance to big cities?

NATEDUC $N = 24$ improving the nation's education system?

NATEDUCY $N = 15$ education?

NATENVIR $N = 24$ improving and protecting the environment?

NATENVIY $N = 15$ the environment?

NATFARE $N = 24$ welfare?

NATFAREY $N = 15$ assistance to the poor?

NATHEAL $N = 24$ improving and protecting the nation's health?

NATHEALY $N = 15$ health?

NATMASS $N = 15$ mass transportation?

NATRACE $N = 24$ improving the conditions of blacks?

NATRACEY $N = 15$ assistance to blacks?

NATROAD $N = 15$ highways and bridges?

NATSOC $N = 15$ social security?

NATSPAC $N = 24$ the space exploration program?

NATSPACY $N = 15$ space exploration?

ANES Mood Index Questions

VCF0839 $N = 11$ Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel that it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale, or haven't you thought much about this? (7-point scale shown to *R*)

VCF0843 $N = 11$ Some people believe that we should spend much less money for defense. (1996: Suppose these people are at one end of a scale, at point 1.) Others feel that defense spending should be greatly increased. (1996: Suppose these people are at the other end, at point 7.) Where would you place yourself on this scale or haven't you thought much about this? (7-point scale shown to *R*)

Spending stem: If you had a say in making up the federal budget this year, for which programs would you like to see spending increased and for which would you like to see spending decreased: Should federal spending on [item] be increased, decreased or kept about the same?

VCF0887 $N = 8$ Child care

VCF0888 $N = 7$ Dealing with crime

VCF0890 $N = 9$ Public schools

VCF0892 $N = 5$ Foreign aid

VCF0894 $N = 6$ Welfare programs

VCF9046 $N = 8$ Food Stamps

VCF9047 $N = 9$ Improving and protecting the environment

VCF9048 $N = 6$ Science and technology/Space and scientific research/the space program

VCF9049 $N = 10$ Social Security

VCF9050 $N = 6$ Programs that assist blacks

ANES Political Information Index Questions

VCF0729: Do you happen to know which party had the most members in the House of Representatives in Washington before the election (this/last) month? Which one?

VCF9036: Do you happen to know which party had the most members in the US Senate before the election this/last month? Which one?

VCF0549: Some people believe that we should spend much less money on defense. Others feel that defense spending should be greatly increased. And, of course, other people have opinions somewhere in between. Where would you place the Democratic Party on this scale?

VCF0550: Where would you place the Republican Party on this scale?

VCF0541: Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel that it is important for the government to provide many more services even if it means an increase in spending. Where would you place the Democratic Party (on this scale)?

VCF0542: Where would you place the Republican Party (on this scale)?

VCF0517: Some people feel that the government in Washington should make every possible effort to improve the social and economic positions of blacks. Others feel that the government should not make any special effort to help blacks because they should help themselves. Where would you place the Democratic Party (on this scale)?

VCF0518: Where would you place the Republican Party?

VCF0503: We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people hold are arranged from extremely liberal to extremely conservative. Where would you place the Democratic Party (on this scale)?

VCF0504: Where would you place the Republican Party?

VCF0513: Some people feel that 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 each person get ahead on his/her own. And, of course, some other people have opinions in between. Where would you place the Democratic Party (on this scale)?

VCF0514: Where would you place the Republican Party?

VCF0508: There is much concern about the rapid rise in medical and hospital costs. Some feel there should be a government insurance plan which would cover all medical and hospital expenses. Others feel that medical expenses should be paid by individuals, and through private insurance like Blue Cross. Where would you place the Democratic Party on this scale?

VCF0509: Where would you place the Republican Party?

VCF0050b: Respondent's general level of information about politics and public affairs seemed [interviewer's opinion].