Reconsidering the Relationship Between Cultural Theory, Political Ideology, and Political Knowledge*

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Objective. Social scientists from a variety of disciplines have employed concepts drawn from cultural theory (CT) to explain preferences across an array of issues. Recent research has challenged key elements of CT in a number of ways, perhaps most importantly by arguing that cultural types are simply another formulation of political ideology, and that only politically knowledgeable respondents reliably utilize either cultural or ideological categories in formulating preferences. This study reconsiders and expands upon this contention. *Methods.* Principal component analyses of responses to a U.S. national survey of 4,387 people. *Results.* Our findings are threefold: (1) people with low levels of political knowledge are able to sort egalitarianism and individualism into coherent worldviews; (2) people with high levels of knowledge do *not* collapse egalitarianism and individualism onto a single scale of political ideology; and (3) regardless of levels of knowledge, survey respondents are able to recognize all four of the value orientations proposed by CT. *Conclusion.* CT, which is related to but different than political ideology, offers a robust system of worldviews that both high- and low-knowledge individuals might draw upon to formulate opinions and make decisions.

Social scientists have long been interested in the attitudes, values, and beliefs that orient the formulation of preferences (Adorno et al., 1950; Conover and Feldman, 1984; Feldman, 1988, 2003; Hurwitz and Peffley, 1987; Rokeach, 1973; Wittkopf, 1990; Converse, 1964). Though debate persists about the precise cognitive mechanisms that link these relatively abstract attributes to specific preferences, many scholars argue that deeply held attitudes, values,

and beliefs enable boundedly rational individuals to organize and process information, simplify alternative options, and ultimately formulate "reasonably" rational opinions about various issues (Popkin, 1991; Goren, 2004). Accordingly, researchers have invested a great deal of effort in specifying the list of general attitudes, values, and beliefs that structure individual preferences. Cultural theory (CT, also called "grid-group" theory) marks one such attempt. In the words of Aaron Wildavsky, the worldviews posited by CT enable people who possess "inches of facts to generate miles of preference" (1987:8).

Cultural Theory

Introduced to the social sciences by anthropologist Mary Douglas, political scientist Aaron Wildavsky, and social psychologist Karl Dake, CT argues that four distinctive worldviews or "cultural biases"—egalitarianism, hierarchism, individualism, and fatalism—serve as broad social orientations upon which individuals rely to formulate more specific opinions (Wildavsky, 1987).[1] In short form, these worldviews are intersubjectively derived from relational experiences that cut across two dimensions of social organization. The first of these dimensions is "group," which defines the degree to which an individual understands herself to be incorporated into bounded units or social collectivities. At its base, the group dimension taps the extent to which one's life is "absorbed in and sustained by group membership" (Douglas, 1982:206). Accordingly, the further one moves along the group dimension, the greater the extent to which individual preferences and behaviors will be subsumed by and reflect those of the group. The second dimension of CT is "grid," which incorporates the degree to which patterns of interactions in individuals' lives are circumscribed by externally imposed prescriptions, such as rules, norms, laws, and traditions. The further one moves along the grid dimension, the more one is bound by externally imposed "order" in society. When the group and grid dimensions are overlaid—as illustrated in Figure 1—they produce a matrix of four worldviews: hierarchism, individualism, egalitarianism, and fatalism (Dake, 1991; Jenkins-Smith and Smith, 1994; Rayner, 1992; Thompson, Ellis, and Wildavsky, 1990).

In brief, those disposed to a *hierarchical* worldview are persons with meaningful group identities and binding prescriptions (high group, high grid). They place the welfare of the group before their own, and they are keenly aware of whether individuals are members of the group or outsiders. Likewise, they prefer that people have defined roles in society, and place great value on procedures, lines of authority, social stability, and order. By contrast, a person disposed to an *individualist* worldview experiences little if any group

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[1]The system of values specified by CT is similar but not the same as the approach adopted by McCloskey and Zaller (1984), which identifies two main traditions in the American "ethos"—democracy and capitalism.

FIGURE 1

Graphic Representation of CT
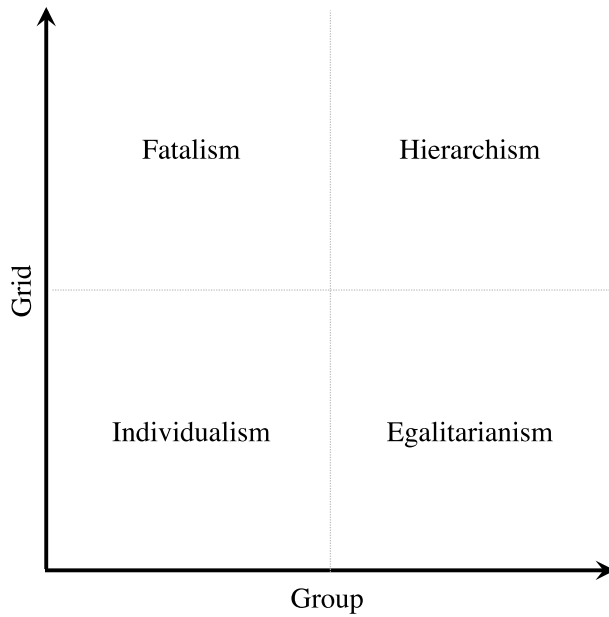
identity, and feels bound by few structural prescriptions (low group, low grid). In general, they prefer a libertarian society based on bidding and bargaining without many rules and regulations, and hesitate to define themselves in terms of group memberships. Next, those disposed to an *egalitarian* worldview seek strong group identities and prefer minimal external prescriptions (high group, low grid). They prefer a society based on equality rather than differentiated status, express a powerful sense of social solidarity, and vest authority within the community rather than externally defined experts. Lastly, those disposed to a *fatalist* worldview consider themselves subject to binding external constraints, yet they feel excluded from membership in important social groups (low group, high grid). They believe they have little control over their lives and that one's fate in life is much more a matter of chance than choice.

Since its inception, the worldviews posited by CT have been used by anthropologists, economists, psychologists, political scientists, and others to explain opinion formation and decision making in a variety of domains, ranging from environmental, regulatory, and economic policy to public health and national security issues.[2] Indeed, the primary utility of CT is its broad appeal

[2]For the application of CT to environmental policy, see Schwarz and Thompson (1990), Ellis and Thompson (1997), Jones (2010, 2011). For a discussion of economic policy and

to scholars from multiple disciplines and its portability to a myriad of issues. Nevertheless, a number of significant criticisms and theoretical limitations have surfaced throughout the years.

In a particularly potent challenge, Michaud, Carlisle, and Smith (2009) argue that CT scholarship has neglected important research in public opinion and voting behavior. In doing so, they launch two interrelated challenges. First, they argue that studies dealing with CT have failed to adequately account for the fact that cognitive complexity (i.e., political sophistication or political knowledge) conditions the use of value-based reasoning in the formulation of coherent political preferences. Following a long line of scholarship in public opinion, political preferences, and behavior, this challenge argues that political knowledge is an essential lynchpin that binds the formulation of coherent attitudes and beliefs (e.g., Converse, 1964; Luskin, 1987; Zaller, 1992). Relating this to CT, Michaud, Carlisle, and Smith (2009) find that individuals with low levels of political knowledge are unable to formulate or express the worldviews posited by CT in a coherent fashion. In their second challenge, they argue that people with high levels of political knowledge treat egalitarianism and individualism as separate ends of a single, liberal–conservative continuum, rather than distinctive worldviews in the manner that CT suggests. If this is the case, then CT is simply another way to measure political ideology. These two challenges combine to form a rather serious critique of CT. On the one hand, it provides an inappropriate value system for people with low levels of political knowledge because they are not able to recognize the dimensions posited by the theory. On the other hand, CT is irrelevant to people with high levels of political knowledge because it simply measures political ideology.

Though the research by Michaud, Carlisle, and Smith (2009) raises important empirical challenges for CT scholars, the empirical evidence on the relationship between CT, ideology, and political knowledge that they bring to bear are incomplete in theoretically important ways. In particular, their decision to look at only two of the four worldviews posited by CT (egalitarianism and individualism) provides only a fragmented characterization of CT and therefore undermines their assessment of the way in which worldviews interact to influence political behavior. Without including the other two worldviews (hierarchism and fatalism), it is difficult to test hypotheses about relationships involving CT, let alone reach a definitive conclusion about the relationship between cultural orientations, ideology, and political knowledge.

In order to more fully examine the complex relationship between CT, political knowledge, and political ideology, this article uses data from a set of broadly representative nation-wide Internet surveys to revisit the questions asked by Michaud, Carlisle, and Smith (2009) about the relationship between

CT, see Malkin and Wildavsky (1991). For a look at CT and regulatory policy, see Lodge, Wegrich, and McElroy (2010). To see how some have applied CT to public health issues, see Kahan et al. (2010) and Jenkins-Smith, Silva, and Song (2011). Lastly, for an example of the application of CT to national security issues, see Jenkins-Smith and Herron (2009) and Ripberger, Jenkins-Smith, and Herron (2011).

individualism, egalitarianism, political ideology, and political knowledge. We then expand upon their work by looking at the way in which political sophistication interacts with the full set of four cultural worldviews that are specified by CT.

Data Collection, Measures, and Research Design

The data used in our analysis are drawn from two U.S. national surveys, both of which were census balanced and administered on the Internet. The first survey consists of 2,676 respondents, administered between April 24 and 27, 2009. The second survey consists of 1,711 respondents, collected between June 22 and 24, 2010. In both samples, respondents were provided a $3 monetary incentive to take and complete the survey. Survey Sampling International (SSI) collected both samples. Like Harris Interactive, Polimetrix, Inc., and many other Internet-based survey companies, SSI achieves a census-balanced sample by recruiting Internet users to be members of a large SSI panel and then sampling from within the panel based on a variety of demographic attributes.[3]

In the analysis that follows, we reconsider the empirical findings and theoretical claims suggested by Michaud, Carlisle, and Smith (2009). Before moving on to our analysis, however, it is important to note that our data are slightly different than the data used in their original analysis. Specifically, there are two points of variation—the survey mode and the questions used to measure CT and political knowledge. With regard to survey mode, Michaud, Carlisle, and Smith (2009) base their analysis on a random digit dialing (RDD) phone survey of 1,475 adults in the state of California, whereas we rely on a pair of nationwide Internet surveys. Though it is possible that this difference could skew our results, the vast majority of empirical research suggests that RDD phone surveys yield results that are similar to Internet surveys when looking at patterns of association between multiple variables (Berrens et al., 2003; Sanders et al., 2007; Chang and Krosnick, 2009; Heiervang and Goodman, 2009; Stephenson and Crête, 2011; de Leeuw, Hox, and Scherpenzeel 2011).[4]

The second difference between Michaud, Carlisle, and Smith (2009) and our analysis concerns the questions utilized to measure CT and political

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[3]For more on this approach to Internet sampling, see Best et al. (2001) and Berrens et al. (2003).

[4]In addition to the differences that might stem from the way in which the respective surveys were administered, this modal variation could result in sample differences (due in part to selection effects). In particular, because our sample was necessarily drawn from a population of Internet users, it is possible that our respondents were, on average, more politically knowledgeable than the respondents in the sample used by Michaud et al. (2009). To test this proposition, we compared the ratio of high- to low-knowledge respondents in both surveys, and found little difference. In the Michaud et al. (2009) sample, that ratio is 200:162 (1.23 percent); in our sample, it is 715:692 (1.03 percent).

knowledge.[5] In particular, the set of questions we use to measure egalitarianism and individualism (two of the four cultural worldviews) are slightly different than the set of questions used by Michaud, Carlisle, and Smith (2009). In our survey, respondents were asked to indicate their agreement with a sequence of six randomized statements designed to detect egalitarian and individualist worldviews. Specifically, each respondent was asked to assess how much or how little they agree with each statement on a scale from one to seven, where one is strongly disagree and seven is strongly agree. Dating back to the early 1990s, a number of studies have found that these survey questions provide for a valid and reliable measure of CT (e.g., Heron and Jenkins-Smith, 2006; Dake, 1991; Jenkins-Smith and Smith, 1994; Wildavsky and Dake, 1990; Ellis and Thompson, 1997; Swedlow, 2008). As shown in Table 1, Michaud, Carlisle, and Smith (2009) rely upon a similar set of eight statements. While both sets of statements are designed to tap similar themes (e.g., fairness, competition, income inequality, markets), there are slight differences with regard to content and wording. Nevertheless, there is little reason to expect that one set of measures would invoke starkly different responses than the other set of questions.

The set of factual questions we use to construct our additive scale of political knowledge are also slightly different than the questions used by Michaud, Carlisle, and Smith (2009). As indicated in Table 1, we deviate slightly from Delli Carpini and Keeter's (1996) recommended set of five questions, used by Michaud, Carlisle, and Smith (2009). Specifically, we ask only four questions, two of which ask respondents to identify whose responsibility it is to nominate judges to the federal courts and how long the term is for a U.S. Senator. Rather than asking these two questions, Michaud, Carlisle, and Smith (2009) ask respondents to answer questions about judicial review, the ideological location of parties, and the current vice president. Following Michaud, Carlisle, and Smith (2009), our scale of political knowledge was then constructed by adding the number of correct answers each respondent gave ($\alpha = 0.53$). If respondents correctly answered zero or one question(s), they were assigned a "1" and categorized as low knowledge; if they answered all four questions correctly, they are assigned a "4" and categorized as high knowledge.[6] Again, we are cognizant of the possibility that differences with regard to question wording can alter the distribution of survey responses (e.g., Smith, 1987; Rasinski, 1989) but believe that a robust theory about the relationship between CT, ideology, and political knowledge should withstand slight differences with regard to measurement. If it does not, the theory should be questioned.

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[5]As is convention in political science (e.g., Converse, 1964; Zaller, 1992), we assess ideology by asking respondents to place themselves on a seven-point scale where one is strongly liberal and seven is strongly conservative. Michaud et al. (2009) do not say how political ideology was measured.

[6]Our results are robust to alternative specifications of the knowledge scale. In particular, our results remain the same when the low-knowledge category is restricted to those who answer zero questions correctly.

TABLE 1

Comparison of Survey Questions

Our Survey	Michaud et al. (2009)
Cultural Theory	
Indi 1: Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own.	Indi 1: Competitive markets are almost always the best way to supply people with the things they need.
Indi 2: Even the disadvantaged should have to make their own way in the world.	Indi 2: Society would be better off if there were much less government regulation of business.
Indi 3: We are all better off when we compete as individuals.	Indi 3: People who are successful in business have a right to enjoy their wealth as they see fit.
	Indi 4: Competition, whether in school, work, or business, leads to better performance and desire for excellence.
Egal 1: What our society needs is a fairness revolution to make the distribution of goods more equal.	Egal 1: What our country needs is a fairness revolution to make the distribution of goods more equal.
Egal 2: It is our responsibility to reduce the differences in income between the rich and the poor.	Egal 2: We need to dramatically reduce inequalities between the rich and the poor, Whites and people of color, and men and women.
Egal 3: Society works best if power is shared equally.	Egal 3: The world would be a more peaceful place if its wealth were divided more equally among nations.
	Egal 4: Government regulation of business is necessary to keep industry from becoming too powerful.
Political Knowledge	
Which party has the most members in the U.S. House of Representatives?	Do you happen to know which party has the most members in the House of Representatives right now?
How much of a majority is required for the U.S. Senate and House to override a presidential veto?	How much of a majority is required for the U.S. Senate and House to override a presidential veto?
Whose responsibility is it to nominate judges to the Federal Courts?	Do you happen to know what job or political office is now held by Dick Cheney?
How long is the term of office for a U.S. Senator?	Whose responsibility is it to determine if a law is constitutional or not . . . is it the president, the Congress, or the Supreme Court?
	Would you say that one of the parties is more conservative than the other at the national level? Which party is more conservative?

Having discussed our data and measures, we turn now to research design. As explained in the preceding section, step one of this article uses our data to reevaluate the two propositions that were forwarded by Michaud, Carlisle, and Smith (2009).[7] First, we explore the proposition that individuals with low levels of political knowledge are unable to formulate or express egalitarianism and individualism (two of the four the worldviews posited by CT) in a coherent fashion. Second, we analyze the notion that people with high levels of political knowledge treat egalitarianism and individualism as separate ends of a single, liberal–conservative continuum, rather than distinctive worldviews such as CT suggests. After this, step two of our analysis expands upon their research by exploring the relationship between political knowledge, ideology, and all four of the worldviews posited by CT. In both steps, we employ principal component analysis to explore the latent dimensionality of the data when stratified by political knowledge.

Step 1: Reconsidering the Relationship Between Individualism, Egalitarianism, Ideology, and Political Knowledge

In order to evaluate the first proposition forwarded by Michaud, Carlisle, and Smith (2009), we conducted principal components analysis (PCA) of our egalitarian and individualist questions at each level of political knowledge. If the central propositions of CT hold, we should consistently extract two principal components—one that is highly correlated with the individualist items and one that is highly correlated with the egalitarian items—regardless of political knowledge. If, by contrast, Michaud, Carlisle, and Smith (2009) are correct, we should extract more than two components at the lowest level of political knowledge that cross-load across the factors and only one component (which may or may not represent political ideology) at the highest level of political knowledge. This would suggest that people at lower levels of political knowledge are unable to differentiate between egalitarian and individualist values whereas people at higher levels of knowledge treat them as opposite ends of a single spectrum.

As indicated by Figure 2 and Table 2, the CT prediction is supported by our data. Each of the vertical bars in Figure 2 represents a component that was extracted from the data. The height of each bar depicts the amount of variation explained by each component. As the plot illustrates, public responses to the individualist and egalitarian questions were consistently reduced to two dimensions, even at the extreme lower ends of the political knowledge scale.[8] Likewise, no one component accounted for more than 35 percent of the variation in the measures, even at the upper ends of the knowledge distribution.

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[7]For a side-by side-comparison of our research to the findings presented in Michaud et al. (2009), see Ripberger et al. (2011).

[8]All components with an eigenvalue of greater than 1.0 were retained.

FIGURE 2

Principal Component Analyses of Egalitarian and Individualist Questions by
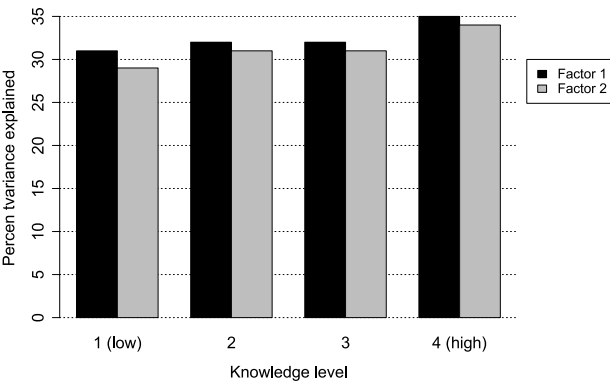Knowledge Level

TABLE 2

Principal Component Analyses of Cultural Values Questions
High and Low Knowledge

	Component 1	Component 2
High Knowledge		
Egal 1	0.84	0.25
Egal 2	0.79	0.02
Egal 3	0.82	0.29
Indi 1	0.25	0.83
Indi 2	0.06	0.85
Indi 3	0.21	0.71
Eigenvalues	2.95	1.21
$n = 715$		
Low Knowledge		
Egal 1	0.84	0.01
Egal 2	0.70	−0.25
Egal 3	0.77	−0.10
Indi 1	−0.11	0.77
Indi 2	−0.17	0.77
Indi 3	−0.02	0.70
Eigenvalues	2.27	1.33
$n = 692$		

In other words, individuals at both ends of the knowledge spectrum appear to recognize that individualism and egalitarianism are two different values.

Turning now to Table 2, which lists the component loadings for the highest and lowest knowledge groups, additional evidence emerges that further supports the argument forwarded by CT. Though there is a slight difference

TABLE 3

Principal Component Analyses of Ideology and Cultural Values Questions High
and Low Knowledge

	High Knowledge	
	Component 1	Component 2
Ideology	0.64	0.43
Egal 1	0.83	0.23
Egal 2	0.77	0.00
Egal 3	0.81	0.27
Indi 1	0.27	0.83
Indi 2	0.07	0.84
Indi 3	0.20	0.70
Eigenvalues	3.44	1.22
$n = 715$		

	Low Knowledge		
	Component 1	Component 2	Component 3
Ideology	0.03	0.04	0.98
Egal 1	0.85	0.01	−0.02
Egal 2	0.71	−0.24	0.01
Egal 3	0.77	−0.09	0.06
Indi 1	−0.11	0.77	0.04
Indi 2	−0.17	0.78	−0.13
Indi 3	−0.03	0.70	0.12
Eigenvalues	2.33	1.29	1.00
$n = 692$			

in the magnitude of the coefficients between the two knowledge groups (high
and low), individuals within both groups display a clear pattern of value con-
sistency. In both knowledge groups, component 1 is clearly tapping into a
distinctive egalitarian dimension. All of the coefficients associated with the
egalitarian questions are positive and high, whereas the coefficients associated
with the individualism questions are substantially lower. By comparison, com-
ponent 2 taps into a separate individualism dimension. All of the coefficients
associated with the individualism questions are positive and high, whereas the
coefficients associated with the egalitarian questions are considerably lower.
Contrary to what Michaud, Carlisle, and Smith (2009) propose, these re-
sults suggest that respondents at all levels of political knowledge think about
egalitarianism and individualism as distinctive value sets, which is expected
by CT.

Moving on to the second proposition forwarded by Michaud, Carlisle,
and Smith (2009), the analysis summarized in Table 3—which simply adds
an indicator of political ideology to the aforementioned PCA model—
allows us to evaluate the theory that highly knowledgeable respondents con-
sider egalitarianism and individualism to be components of a more general

liberal–conservative political ideology. If their prediction is correct, the data for highly knowledgeable respondents should be reduced to a single component that is highly correlated with the ideology measure.[9] As Table 3 indicates, this does not seem to be the case. Rather, we again extract two principal components for the high-knowledge group. Based upon the pattern of loadings, it appears that component 1 taps egalitarianism and component 2 appears to measure individualism. More importantly, the political ideology item split-loaded across the two components, with coefficients of 0.64 and 0.43, suggesting that ideology is related to but not the same thing as egalitarianism and individualism. Meanwhile, three principal components were extracted from responses in the low-knowledge group. Component 1 is highly correlated with egalitarianism, component 2 is associated with individualism, and component 3 appears to exclusively capture political ideology. These results reaffirm our findings in previous analyses that egalitarianism and individualism represent separate value dimensions, irrespective of levels of political knowledge. Moreover, they suggest that egalitarianism and individualism, though related, are not capturing the same value dimension as political ideology. This is precisely what CT suggests.

Step 2: The Relationship Between All Four Cultural Types, Ideology, and Political Knowledge

As indicated in the preceding section, previous research on the relationship between CT and political sophistication has neglected hierarchism and fatalism, which represent two of the four cultural types specified by CT. With this in mind, this step in our analysis addresses a critical follow-up question. Specifically, are hierarchism and fatalism—like egalitarianism and individualism—distinctive value dimensions that remain constant across the various levels of political knowledge? CT suggests that all individuals, regardless of sophistication, will recognize the notion that egalitarianism, hierarchism, individualism, and fatalism represent separate values. To explore this proposition, we incorporated our indicators of hierarchism and fatalism into the previously specified PCA model of cultural values, which included our measures of egalitarianism and individualism. If CT is correct, our mix of CT questions should yield four principal components, each of which is associated with a different value dimension. More importantly, if CT is accessible to the entire population, the four-component solution should be consistent across each level of political knowledge. If, by comparison, the explanation advanced by Michaud, Carlisle, and Smith (2009) is correct, we should see relatively stark differences between high- and low-knowledge respondents.

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[9]As a point of reference, Michaud et al. (2009) find that the coefficient for ideology among highly knowledgeable respondents is 0.78.

FIGURE 3

Principal Component Analyses of All CT Questions by Knowledge Level
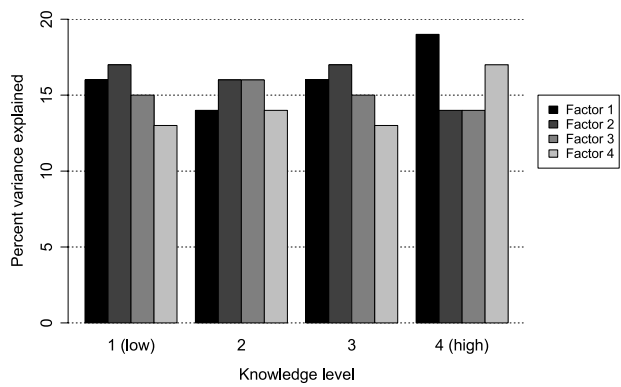
The results from the PCA of all four cultural value measures, broken down by knowledge level, are summarized in Figure 3 and Table 4. As before, each bar in Figure 3 depicts an underlying conceptual dimension extracted from survey responses for a total of 12 survey questions related to cultural values (three survey questions for each of the four cultural values) and the height of the bar displays the total variance explained by each dimension. Table 4 shows the component coefficients for respondents with the highest and lowest level of political knowledge.

As illustrated in Figure 3, our PCA extracted four components that account for about 60 to 65 percent of the variance in the 12 survey questions that were designed to tap into the egalitarian, individualist, hierarchism, and fatalist worldviews. Moreover, the four-factor solution remains consistent across the different levels of political knowledge, and no one factor accounts for more than 20 percent of the variation within survey responses. As presented in Table 4, individuals with a high level of political knowledge reveal a value structure that is remarkably consistent with CT. Based on the large and positive pattern of coefficient loadings, component 1 appears to capture individualism, component 2 looks to be measuring egalitarianism, component 3 is tapping into fatalism, and component 4 is clearly associated with hierarchism. For those respondents in the low-knowledge group, the PCA results are somewhat less structured, but revealing of a pattern nonetheless. Component 1 appears to be measuring egalitarianism, component 2 is associated with fatalism, component 3 taps into individualism, and component 4 hints at hierarchism, though only two of the three coefficients seem to register high coefficients. Rather than being uniquely correlated with component 4, the *Hier 3* measure cross-loads on components one and three, with moderate coefficients of

TABLE 4

Principal Component Analyses of All Cultural Values Questions
High and Low Knowledge

	Component 1	Component 2	Component 3	Component 4
High Knowledge				
Egal 1	−0.28	0.80	0.18	0.13
Egal 2	−0.02	0.80	0.08	−0.06
Egal 3	−0.30	0.80	0.09	0.03
Indi 1	0.83	−0.25	0.04	0.04
Indi 2	0.82	−0.08	0.05	0.07
Indi 3	0.68	−0.22	−0.02	0.00
Hier 1	−0.05	0.00	0.14	0.80
Hier 2	0.06	0.03	0.15	0.80
Hier 3	0.46	0.05	−0.08	0.52
Fata 1	−0.02	0.10	0.77	−0.04
Fata 2	−0.04	0.08	0.75	0.11
Fata 3	0.10	0.09	0.61	0.17
Eigenvalues	3.10	2.19	1.20	1.05
$n = 715$				
Low Knowledge				
Egal 1	0.83	0.14	−0.02	0.01
Egal 2	0.71	0.01	0.28	0.08
Egal 3	0.69	0.22	0.01	0.16
Indi 1	0.09	0.14	0.78	0.04
Indi 2	0.16	0.06	0.77	0.19
Indi 3	−0.06	0.47	0.55	0.06
Hier 1	0.03	0.27	0.10	0.79
Hier 2	0.17	0.12	0.12	0.83
Hier 3	0.41	0.01	0.36	0.38
Fata 1	0.04	0.69	0.20	0.19
Fata 2	0.31	0.66	0.00	0.08
Fata 3	0.11	0.76	0.13	0.15
Eigenvalues	3.70	1.43	1.14	1.03
$n = 692$				

0.41 and 0.36, respectively.[10] Despite this anomaly, the overall pattern of the component structure matrix for less knowledgeable individuals is very close to the one acquired from highly sophisticated respondents. In accordance with CT, these results strongly support the notion that survey respondents think about egalitarianism, individualism, hierarchism, and fatalism as conceptually

[10]We conjecture that the split loadings of *Hier 3* result from slight ambiguities in question wording. As it stands, this statement appears to neglect the grid dimension that separates hierarchs and egalitarians. In order to test this conjecture, we suggest that researchers consider changing the *Hier 3* statement that reads, "Society would be much better off if *we* imposed strict and swift punishment on those that break the rules" to "Society would be much better off if *the people in charge* imposed strict and swift punishment on those that break the rules." We expect that this change in wording will better capture individual positions along the grid dimension.

distinctive value dimensions. Likewise, the fact that our findings were reasonably consistent across each level of political knowledge suggests that CT offers a robust system of values that is accessible to a large portion of the population.

Implications and Conclusions

Recent research by Michaud, Carlisle, and Smith (2009) places CT within the long-standing and important debate about the nature of belief systems. On one side of this debate, scholars have argued that low levels of knowledge prompt inconsistencies within individual belief systems that prevent uninformed individuals from formulating coherent preferences (e.g., Converse, 1964; Stimson, 1975; Zaller, 1992; Delli Carpini and Keeter, 1996). On the other side of this debate, scholars have argued that affect, values, and/or cue-based heuristics, help individuals with low levels of political knowledge to formulate a relatively coherent system of beliefs (e.g., Goren 2004; Brady and Sniderman, 1985; Sniderman, Brody, and Tetlock, 1991; Popkin, 1991; Lupia, 1994). In applying CT to this debate, Michaud, Carlisle, and Smith (2009) seem to conclude that low-knowledge individuals will demonstrate incoherent preferences. Specifically, they find that individuals with low levels of political knowledge show little consistency in their ability to differentiate between the egalitarian and individualist worldviews that are associated with CT. They further argue that individuals with high levels of political sophistication collapse egalitarianism and individualism onto a single liberal–conservative continuum of political ideology, rather than treating them as conceptually distinct value orientations. When considered in tandem, these arguments undermine two of the primary arguments of CT. First, cultural orientations help individuals who are not actively engaged in politics to structure political preferences; second, these orientations help many people to reconcile the contradictions embedded in a unidimensional conception of political ideology.

Given the theoretical importance of this argument, our work reconsiders the relationship between egalitarianism, individualism, and political ideology when conditioned by political knowledge. Upon doing so, we find that people across all levels of political sophistication are able to recognize the worldviews associated with CT, and that these worldviews are distinct from political ideology. After reconsidering previous findings, we went on to examine CT in its entirety, by including hierarchism and fatalism in our analysis. Our findings suggest that all groups of people, regardless of their knowledge about politics, were able to sort our list of 12 randomly asked questions into four coherent dimensions that are uniquely correlated with hierarchism, egalitarianism, individualism, and fatalism. In other words, our research suggests that CT offers a relatively robust system of worldviews that both high- and low-knowledge individuals might draw upon to deduce coherent political preferences. In addition to empirically validating the theoretical propositions made by CT, these findings speak to the above-mentioned debate by suggesting that all groups of

individuals—including those who are relatively unsophisticated—are capable of formulating and expressing coherent political preferences.

As researchers continue to wrestle with the relationship between political ideology, CT, and cognitive sophistication, we suggest that the following four questions be addressed. First, why are our findings different than the results in Michaud, Carlisle, and Smith (2009)? Several methodological explanations are obvious candidates. One concerns the differing survey modes employed. Michaud, Carlisle, and Smith (2009) base their analysis on a RDD telephone survey of California residents, while we rely on a national census-based sample, with surveys administered on the Internet. Though these differences could certainly account for some variation in our respective findings, the weight of previous empirical research suggests that RDD phone surveys should yield results that are similar to Internet surveys when looking at patterns of association between multiple variables. To corroborate this notion, we conducted supplementary analysis using a nation-wide RDD telephone survey that was collected in 1995. The survey used the same questions that we used to measure CT, but did not contain questions about political knowledge; accordingly, we followed the lead of Sniderman, Brody, and Tetlock (1991) by using education as a measure of cognitive sophistication. The results were consistent with our findings in using the Internet surveys.[11] Therefore, we do not believe that differences in survey mode alone can account for the wide variation in our respective results. However, we encourage future research that compares the results from surveys (containing CT, ideology, and political knowledge measures) administered both through an RDD phone survey and the Internet.

Another candidate for explaining the difference between our results and the findings presented in Michaud, Carlisle, and Smith (2009) rests on variations in question wording. The CT and political knowledge measures used in each study were somewhat different. However, as shown in Table 1, the wording differences are modest, and generally stylistic rather than substantive. Both sets of questions are focused on similar themes. Accordingly, we are hesitant to attribute substantial fractions of the variation in our respective findings to question differences. After all, question differences exist across many of the CT studies using survey-based measures. Yet, the bulk of this work points to similar conclusions, with no evidence of systematic bias caused by minor variations in question wording. However, measurement is always an issue and scholars should continue to develop indicator questions that better measure the latent concepts explored by CT.

A second question that future research should address concerns the collective understanding of scholars regarding cognitive sophistication. Consistent with the approach taken by Michaud, Carlisle, and Smith (2009), our analysis relied upon political knowledge as a measure of cognitive sophistication more broadly. When examining values related to politics, such as

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[11]Results of supplementary PCA using the 1995 phone survey are available upon request from the authors.

liberal–conservative political ideology, this would appear to be an appropriate strategy. However, as we move beyond the realm of political values toward more abstract beliefs about the way in which society should be organized, the appropriateness of political knowledge as a measure of cognitive sophistication should be examined. Specifically, why should political knowledge (or lack thereof) influence a person's beliefs about how he or she structures personal relationships? Perhaps, a broader measure of cognitive sophistication, such as education, need for cognition, or individual aptitude (i.e., numeracy) would be more appropriate.

Third, future research should continue to explore the complex relationship between ideology and CT, with a particular emphasis on the mediating role of political institutions. As recognized by Anthony Downs (1957), preference expression and aggregation does not take place in a vacuum. Rather, the structure of electoral systems and political parties tightly governs this process. In the United States, with single-member districts and plurality election rules, the system militates strongly toward two dominant political parties with relatively well-known ideological positions. As a consequence of this process, members of the public are forced to reconcile multidimensional values with dichotomous ideological preferences (Jackson, 2011). This makes for an interesting and perhaps unstable relationship between value systems such as CT and political ideology as it evolves to match the contemporary political landscape.[12] Thus, rather than treating CT and ideology as if they were synonymous, we encourage scholars to explore the way in which the relationship between them changes over time and across institutional configurations.

Finally, we suggest that future research should incorporate political preferences into our understanding of cognitive sophistication, CT, and ideology. In this article, we have argued that all groups of individuals, regardless of political knowledge, are able to recognize the distinctive worldviews proposed by CT. As a logical extension of this finding, scholars should examine the extent to which groups of individuals, with varying degrees of political knowledge or cognitive sophistication more broadly, use CT to formulate their more specific policy preferences. For instance, we know that people with egalitarian values tend to support environmentally friendly policies. Future research should explore the extent to which the strength of the relationship between egalitarianism and environmentalism is conditioned by cognitive sophistication. Additionally, researchers might explore the way in which cognitive sophistication influences individual choices about which kinds of values and beliefs to use when faced with questions about public policy or politics. Perhaps those with lower levels of sophistication rely upon relatively abstract values such as CT, whereas those who are more sophisticated rely on values that are specific to the political process, such as ideology. Research in this direction is promising for at least two important reasons: first, it will advance the study of CT, which

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[12]As a start in this direction, we suggest that readers look at Swedlow (2008), Swedlow and Wyckoff (2009), and Treier and Hillygus (2009).

is a major (and growing) research program within several disciplines. More importantly, it will add important insight to the ongoing debate in the social science about the extent to which individuals draw upon their values in order to make reasonably rational decisions.

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