PART II

Theories of Public Opinion Formation and Change

Section 1

Formation of Opinion

12

Knowledge and Attitudes

Penny S. Visser, Allyson Holbrook and Jon A. Krosnick

The simple notion that citizens elect representatives who implement policies with which they agree is central to democratic theory. In this way, all citizens can pursue their own interests as well as the interests of the common good in an orderly and efficient way. According to many political theorists, this simple process enables democratic governments to maintain stability and legitimacy.

On closer inspection, however, this process is far from simple. It depends critically on a number of fairly demanding steps. It first requires that at least a substantial majority of citizens carefully attend to political events on the local, state, and national stages. Further, citizens must consolidate the constant stream of political information provided by the news media, advocacy groups, and other individuals within the social environment, and they must store this information in memory for later use. From this elaborate and diverse set of stored information, citizens must derive attitudes on salient issues of the day that reflect their interests and other core predispositions. Citizens must then discriminate among various candidates for political office, identifying those who hold issue positions closest to their own, and they must cast ballots in support of those candidates during elections. This can be difficult, because candidates often do not clearly and consistently state their positions on issues (Page, 1978), and the media do not make special efforts to communicate candidates' positions to the public (Graber, 1980; Patterson, 1980; Patterson & McClure, 1976). Finally, citizens must monitor the actions of their elected officials, holding them accountable for pursuing the appropriate policies and in other ways serving the citizens' goals and interests.

All of this suggests that the functioning of a healthy democracy requires an engaged and informed citizenry whose attitudes and preferences reflect careful consideration of a broad set of political information. In this chapter, we consider the extent to which ordinary citizens live up to this ideal. We also consider the antecedents of and barriers to the acquisition of political knowledge and trace the various consequences of knowledge for political attitudes, judgments, and behavior.

[15:07 2/8/2007 4984-donsbach-ch12.tex] Paper: a4 Job No: 4984 Donsbach: Public Opinion Research (SAGE Handbook) Page: 127 123–140

HOW KNOWLEDGEABLE?

So how much do ordinary citizens know about political matters? Several decades of research provide a resounding answer: not much at all. Looking first at young adults, research on civic education within the US suggests that most young people enter adulthood with a rather tenuous grasp on basic features of the political system. In fact, a recent survey administered by the US Department of Education (Lutkus, Weiss, Campbell, Mazzeo, & Lazer, 1999) revealed that by the time they reach twelfth grade, only about a quarter of US students performed at or above the level of expected proficiency in civic knowledge. And fully 35% of high school seniors tested below the most basic level, reflecting virtually no knowledge about the political system.

Research with representative samples of US adults suggests that these early deficits often persist. In one especially comprehensive investigation, Delli Carpini and Keeter (1996) analyzed over 2000 political knowledge questions posed to representative samples of American adults, covering basic features of political institutions and processes, salient policy domains, and prominent political leaders. They found that most Americans were at best moderately informed about political matters, and many were exceedingly uninformed. For example, only 44% of Americans could name one of the three branches of government. When presented with the three branches, less than 60% could say which one determines the constitutionality of a law. Just over 30% of American adults could provide even the most rudimentary definition of affirmative action, and less than 60% knew that Roe *v*. Wade involved the issue of abortion rights. Overall, Delli Carpini and Keeter (1996) found that only 41% of Americans knew the answers to 50% or more of the political knowledge questions, and only 13% were able to answer 75% of the questions. Findings like these have led to much hand-wringing across the social sciences, as political scientists and others lament "the breadth and depth of citizen ignorance" (Lupia & McCubbins, 1998, p. 1). These alarmingly low levels of political knowledge have typically been viewed as a serious threat to the functioning of democracy.

Interpreting these findings

Recently, however, scholars have begun to question the degree to which these observed low levels of political knowledge do in fact repudiate the competence of ordinary citizens to participate in the democratic process. Some scholars have pointed out, for example, that it is not clear precisely what knowledge is necessary for people to be effective democratic citizens, or if the questions posed to survey respondents measure that knowledge (Krosnick, 1998; Kuklinski & Quirk, 2001; Lupia, in press). No effort has been made to define the universe of necessary knowledge or to sample from such a universe in any systematic way (Krosnick, 1998). In fact, only recently have scholars begun to articulate the conceptual foundations of citizen competence, explicitly delineating the specific tasks that confront citizens, the criteria by which their performance of these tasks should be evaluated, the observable indicators of the criteria, and the standards against which the indicators should be evaluated (Kuklinski & Quirk, 2001). Because such systematic analysis has been absent, it is difficult to know what to conclude from responses to the apparently arbitrary set of knowledge items that have been posed to survey respondents over the years.

Others have challenged the way that political knowledge is assessed, suggesting that the "pop quiz" format of the typical telephone survey is misleading regarding the process by which citizens wield political information in consequential judgments and decisions (Prior & Lupia, 2005). They suggest that, as in most domains in life, the critical element is not the number of discrete bits of information stored in memory and available for instantaneous retrieval, but rather the ability and motivation to access and utilize relevant pieces of information when the task at hands calls for it. Thus, the fact that most people do not have an encyclopedic set of political facts at their fingertips does

not mean that the political judgments and decisions that they make are groundless. When faced with a consequential judgment or decision, people may well seek out and then make use of relevant information. Telephone surveys that pose unexpected knowledge questions provide respondents with neither the motivation nor the opportunity to do so, and thus offer a distorted portrait of the role of political information in citizens' judgments, decisions, and behaviors. Indeed, when provided with both opportunity and motivation, ordinary citizens prove to be quite capable of utilizing political information (Prior & Lupia, 2005).

Some have suggested that the volume of political information retained in memory (and therefore available for retrieval during an interview) may vastly underestimate the amount and diversity of information upon which people's political opinions are based (Lodge, Steenbergen, & Brau, 1995). Rather than meticulously cataloging and storing the vast array of political information to which they are exposed, people may simply adjust their attitudes on-line, modifying their views in light of new information. Having incorporated the information into their relevant opinions, people may choose not to expend the additional effort to retain the information in memory. It may be misleading, therefore, to use tests of political knowledge to draw inferences about the degree to which ordinary citizens hold informed opinions.

As this discussion illustrates, the interpretation of political knowledge levels among the mass public is somewhat controversial. Regardless of one's interpretation, however, the fact remains that most citizens do not know very much about the people, policies, and institutions that comprise their political system.

WHY SUCH LOW LEVELS OF POLITICAL KNOWLEDGE?

To begin to understand these low levels of political knowledge, we must consider the general processes by which people become knowledgeable about various topics. People gain knowledge in two primary ways: (1) through direct experiences with an attitude object (Fazio & Zanna, 1981; Wood, Rhodes, & Biek, 1995); and (2) through exposure and attention to information about the object from other people, transmitted during informal conversations (Robinson & Levy, 1986), formal schooling (Nie, Junn & Stehlik-Barry, 1996), or through the mass media (McGuire, 1986; Roberts & Maccoby, 1985). They acquire knowledge about social and political issues through exposure and attention to information provided by other people, especially by the news media (Clarke & Fredin, 1978; Clarke & Kline, 1974; Perse, 1990).

Exposure, however, is just the first of several steps in the process of knowledge acquisition. After individuals are exposed to new information, they must devote perceptual attention to it, bringing it into short-term or working memory (Baddeley & Hitch, 1974). Of course, it is impossible for individuals to attend to all of the stimuli that bombard their senses at any given moment, so people selectively attend to some things and filter out the vast majority of others. Some of the information that is brought into short term or working memory undergoes elaboration, during which an individual actively thinks about the new information and relates it to information already stored in memory. Through this process, associative links are built, connecting new information to previously acquired information (Craik & Lockhart, 1972). The more extensively an individual processes new information, the stronger the neural trace and the more likely it will be available for later retrieval (e.g., Craik, 1977; Tyler, Hertel, MacCallum, & Ellis, 1979). Thus, the process of acquiring knowledge about the political world is costly, imposing tremendous cognitive demands (Downs, 1957).

These demands are especially high for people who have little political knowledge to begin with. Prior knowledge on a particular topic improves people's ability to comprehend new information, enabling them to extract the central elements of a message and draw

appropriate inferences efficiently (Eckhardt, Wood, & Jacobvitz, 1991; Recht & Leslie, 1988). Prior knowledge also enhances people's ability to store new information on that topic and retrieve the information later (e.g., Cooke, Atlas, Lane, & Berger, 1993; Fiske, Lau, & Smith, 1990; Hambrick, 2003; McGraw & Pinney, 1990; Recht & Leslie, 1988; Schneider, Gruber, Gold, & Opwis, 1993). So the less political information individuals have stored in memory, the more difficult it is for them to acquire new information.

In addition to the substantial cognitive burdens it imposes, the acquisition of political knowledge involves other costs as well. In particular, it reduces the resources available for acquiring information about other topics. The more a person is exposed to information about political issues and objects, and the more resources he or she devotes to attending to and elaborating this information, the less likely it is that other available information will be stored in their long-term memory and available for later retrieval (e.g., Kahneman, 1973). Thus, becoming more knowledgeable about political matters often comes at the cost of gaining knowledge about other topics.

DETERMINANTS OF POLITICAL KNOWLEDGE

Under what circumstances are people willing to bear the cognitive burdens and opportunity costs of becoming politically knowledgeable? And how do people select among the myriad political issues and objects that vie for their attention?

Incidental media exposure

People sometimes learn about the political world through incidental exposure to news media coverage of politics (Krugman & Hartley, 1970; Tweksbury, Weaver, & Maddex, 2001; Zukin & Snyder, 1984). For example, a person with no particular interest in politics may nonetheless become politically knowledgeable because he or she routinely watches the evening news, either out of habit or because another household member regularly tunes in. Such passive learning may be especially likely from televised news broadcasts, which often contain vivid graphics and visual images that require fewer cognitive resources to decode and retain in memory (Graber, 1990).

Non-selective media exposure

People also intentionally expose themselves to information about the political world. Many people tune in to general television or radio news programs or regularly visit pages on the World Wide Web that cover a range of political topics, for example, leading to increases in political knowledge (e.g., Delli Carpini & Keeter, 1997; Roberts & Maccoby, 1985). The flowing nature of television and radio news programs does not easily afford news consumers opportunities to expose themselves to some stories and not others. Therefore, choosing to watch or hear such programs typically produces nonselective exposure to information on many topics.

The decision to tune in to television or radio news broadcasts is, of course, influenced by interest in politics: those who find politics intrinsically interesting are much more likely to expose themselves to news programming intentionally than those who are disinterested in politics (e.g., Delli Carpini & Keeter, 1997; Luskin, 1990). News media consumption is also influenced by more general surveillance motives: those who are more intrinsically motivated to monitor their environment pay more attention and give more thought to news broadcasts than those with lower motivation (e.g., Eveland, Shah, & Kwak, 2003).

Issue-specific selective attention

People are selective not only in terms of the overall amount of attention they pay to the news media, but also regarding the amount of attention they pay to coverage of specific issues. Indeed, people sometimes actively seek out information about some issue but make no special effort to gain information about others, rendering them

deeply knowledgeable about the former and less informed about the latter.

How do people decide which issues to attend to? One answer is suggested by the positive correlation between the volume of knowledge a person has stored in memory about an object and the importance people attach to their attitude toward the object. People consider themselves more knowledgeable about an object when their attitudes toward it are important to them (e.g., Bassili, 1996; Krosnick, Boninger, Chuang, Berent, & Carnot, 1993; Prislin, 1996; Visser, 1998), and they can retrieve more information about the attitude object from memory (Berent & Krosnick, 1995; Krosnick *et al.*, 1993; Wood, 1982). The knowledge accompanying more important attitudes is also more likely to be accurate (Krosnick, 1990). These associations suggest that attitude importance may provide the impetus for knowledge acquisition, motivating people to gather and retain information about some attitude objects at the expense of learning about others. Attitude importance is a person's subjective sense of how much significance to attach to an attitude–how much to care and be concerned about it (see Boninger, Krosnick, Berent, & Fabrigar, 1995). Attaching importance is highly consequential–it leads people to use the attitude in processing information, making decisions, and selecting a course of action (for a review, see Boninger, Krosnick, Berent, & Fabrigar, 1995). And having substantial knowledge about the attitude object seems likely to be quite useful to facilitating effective attitude use. As a result, attitude importance may motivate the acquisition of relevant knowledge in long-term memory.

This may occur because attitude importance guides people's choices when they are deciding to which information they will attend. They may selectively attend to information relevant to their more important attitudes, particularly when available information is abundant and time or cognitive resources are limited. After they have been exposed to information, people may process it more deeply if it is relevant to important attitudes, because such processing is likely to serve strategic purposes later. As a result, this new information is more likely to be stored in long-term memory and available for later retrieval.

In a program of research employing both naturalistic and laboratory investigations, Holbrook, Berent, Krosnick, Visser, & Boninger (2005) recently documented precisely these causal processes. They found, for example, that after watching a televised presidential debate under naturalistic conditions, viewers were better able to remember the candidates' statements about policy issues on which they had more personally important attitudes. And they found that attitude importance regulated knowledge acquisition by inspiring selective exposure and selective elaboration: when given the opportunity to choose, people sought information about policies toward which they had more personally important attitudes, and chose to think more about these policies as well. Further, they demonstrated that when the opportunity for selective exposure and selective elaboration was eliminated, the relation between importance and knowledge also disappeared. Taken together, these findings suggest that attaching personal importance to an attitude motivates people to expose themselves selectively to attitude-relevant information and elaborate that information, leading to the acquisition and maintenance of information in long-term memory.

But why do people attach importance to some issues and objects and not others? Three primary antecedents of attitude importance have been identified (see Boninger, Krosnick, & Berent, 1995). People attach importance to some attitudes because they perceive that the attitude object impinges on their material self-interests. For example, senior citizens who rely on Medicare would be especially likely to attach importance to their attitudes toward new Medicare policies.

People attach importance to other attitudes because they perceive a link between the attitude object and their core values. Values refer to a person's fundamental beliefs about how people ought to behave, or about what end-states are desirable (Rokeach, 1968). Attitudes that are tightly linked to one or

more of a person's core values are deemed more important than attitudes that are loosely associated with their values. For example, an individual who cherishes the end-state of a world at peace may see a connection between this core value and his or her attitude toward the Iraq war. This connection would lead them to attach personal importance to this attitude.

Finally, people attach importance to some attitudes because the groups or individuals with whom they identify are materially affected by the object or consider their attitudes toward the object to be important. For example, even if she never expects to be personally affected by changes to abortion laws, a woman may attach importance to her attitude toward legalized abortion because she identifies with women everywhere, some of whom would be affected by changes in abortion laws.

Links to self interest, core values, or social identities often lead people to attach personal importance to particular political issues such as Medicare reform or legalized abortion. But these antecedents can also lead people to attach importance to the domain of politics more generally, increasing their motivation to acquire knowledge about a wide range of political topics and issues. Thus, importance can inspire selective expertise on political topics of particular significance to an individual, or it can inspire more general information gains across a broad spectrum of currently salient political topics.

An illustration: Attitudes toward legalized abortion

One recent investigation illustrates several of these processes. Visser, Krosnick, and Norris (2004) explored the determinants of knowledge about legalized abortion. Replicating past research, they found that self-interest, the importance of the issue to reference groups and individuals, and value-relevance each predicted unique variance in the personal importance that people attached to their attitudes on this issue. And attitude importance was a strong predictor of the volume of information people sought and possessed about legalized abortion. This suggests that people who cared deeply about the issue of abortion sought out information about the issue, thought deeply about it, and retained the information in memory. Exposure to news media, on the other hand, was unrelated to the importance people attached to this issue, but it was a strong predictor of knowledge about legalized abortion (see Figure 12.1). Thus, both selective and nonselective media exposure appear to have contributed to levels of knowledge about abortion.

CONSEQUENCES OF KNOWLEDGE

We began this chapter by noting that democratic theory rests on the assumption that citizens are both informed and engaged,

Au: Please clarify if any explanation for the symbols (asterisks).

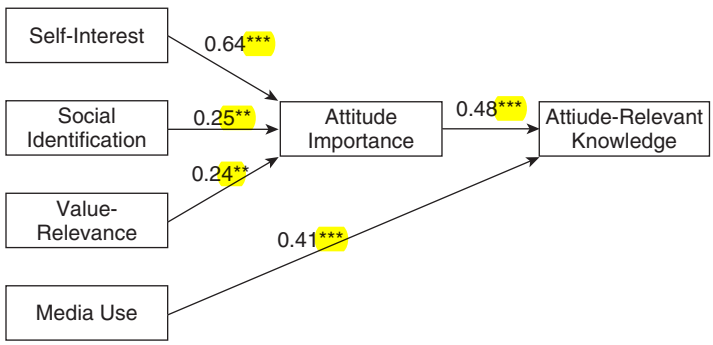

Figure 12.1 Determinants of knowledge as documented by Visser, Krosnick, and Norris (2004)

capable of selecting political leaders who represent their goals and interests, and of holding those leaders accountable once in office. As we have seen, however, an overwhelming body of evidence calls into question ordinary citizens' ability to perform these duties. Just how concerned should we be about the dearth of political knowledge within the general public? In other words, what are the consequences of possessing or failing to possess political knowledge?

Generally speaking, possessing a large store of information confers a host of cognitive abilities, with clear implications for attitudes and behavior. In addition to aiding comprehension and retention of new information, knowledge increases the speed of relevant judgments (e.g., Fiske *et al*., 1990; Paull & Glencross, 1997) and improves people's ability to utilize cues in decision tasks (Paull & Glencross, 1997). This suggests that people with more political knowledge are better able to integrate various aspects of political issues efficiently and effectively, weigh the advantages and disadvantages of specific political policies, and synthesize the diverse attributes of political candidates. Thus, their political attitudes are likely to reflect a more thorough and sophisticated combination of the positive and negative aspects of the objects, issues, and people they encounter in the political realm.

Consistent with this notion, a good deal of evidence suggests that people who possess a large store of political knowledge are better able to recognize links between particular political policies and their own material interests or other core predispositions, and they are better able to identify political candidates who are likely to share their views and work to enact laws that they support (Delli Carpini & Keeter, 1996; Zaller, 1992). The politically knowledgeable are also better able to recognize the ideological underpinnings of various policy positions, and are more likely to adopt ideologically coherent attitudes across a range of issues (Delli Carpini & Keeter, 1996). Thus, knowledge enables people to utilize incoming political information efficiently and effectively.

Knowledge also improves people's ability to evaluate critically the cogency of persuasive messages (Ratneshwar & Chaiken, 1991; Wood, Kallren, & Preisler, 1985) and to generate effective counter-arguments to a persuasive appeal, rendering them resistant to attitude change (Muthukrishnan, Pham, & Mungale, 1999; Wood, 1982; Wood *et al*., 1995). This suggests that the politically knowledgeable are less likely to be buffeted about by the constantly shifting winds of political rhetoric. Instead, they scrutinize counter-attitudinal information and defend their views against all but the most compelling challenges to their attitudes. Indeed, people with more political knowledge exhibit greater attitude stability over time than people who possess less knowledge (Delli Carpini & Keeter, 1996).

Knowledge also equips people with the information they need to plan and execute effective behavioral strategies, enabling them to engage in attitude-expressive behaviors efficiently. For example, knowledge about environmental conservation has been shown to enable people with pro-environmental attitudes to express their views behaviorally (e.g., Kallgren & Wood, 1986; Meinhold & Malkus, 2005). And knowledge about the political world is a highly significant predictor of voting behavior: people who possess a large store of political knowledge are far more likely to turn out on election day than those who are less knowledgeable (Delli Carpini & Keeter, 1996; Popkin & Dimock, 1999).

THE LIMITED IMPACT OF KNOWLEDGE

As the preceding review illustrates, there is a wealth of evidence suggesting that knowledge confers a host of cognitive abilities, all of which would seem to facilitate effective navigation of the political terrain, suggesting that interventions that raise the public's level of political knowledge have positive consequences for the functioning of democracy. This conclusion may be premature, however. In other domains, the acquisition of knowledge has very limited consequences.

In the realm of public health, for example, practitioners have often sought to raise knowledge levels in hopes of improving health decisions and modifying behavioral choices. But interventions that have successfully increased the public's level of knowledge have often failed to produce the anticipated consequences of this newfound knowledge.

This was certainly the case in the initial efforts to combat AIDS in the United States. Public health officials assumed that if they could increase people's knowledge about the disease, people would make the appropriate modifications to their behaviors (Helweg-Larsen & Collins, 1997). A massive public education campaign was developed to educate people about the disease (for a review, see Fisher & Fisher, 1992). In terms of its primary goal, this campaign was a resounding success. By the early 1990s, virtually all US adults knew what AIDS was, had some sense of how the disease is transmitted, and knew what steps could be taken to avoid exposure (DiClemente, Forrest, Mickler, & Principal Site Investigators, 1990; Rogers, Singer, & Imperio, 1993). But in terms of its broader aims, this public education campaign was largely a failure, yielding virtually no reliable effects on people's actual behaviors (e.g., Mann, Tarantola, & Netter, 1992). Knowledge, in and of itself, was insufficient for changing judgments and behaviors.

Similar efforts have been initiated in recent years to increase the public's knowledge about the health consequences of obesity. As a part of this effort, the US Department of Health and Human Services hosts a webpage designed to provide health information based on the premise that "accurate scientific information on nutrition and dietary guidance is critical to the public's ability to make the right choices in the effort to curb obesity and other food related diseases" (www.healthierus.gov). So far, though, these kinds of information campaigns seem not to have had their intended effect: the proportion of US adults who are overweight or obese has risen steadily over the last decade, reaching a startling 66% in one recent national study (Hedley, Ogden, Johnson, Carroll, & Curtin, 2004).

And the same sorts of findings have emerged in the political domain. For example, results from "deliberative polls" suggest that even substantial increases in political knowledge often exert little impact on political views (Fishkin, 1991, 1995). According to its proponents, deliberative polling provides insight into the issue positions that ordinary citizens would hold "were they better informed on the issues and had the opportunity and motivation to examine those issues seriously" (Fishkin, 1995, p. 162). But the results of these intensive interventions have often been quite modest.

The first and most widely publicized deliberative poll, held in early 1996, provides a dramatic illustration (Merkel, 1996). Nearly 500 US citizens were assembled in Austin, Texas, for an intense weekend of education and deliberation. Leading up to the weekend, participants were provided with briefing reports on several of the most salient issues of the day, and during the weekend experts in various policy domains provided further information and answered questions about the issues. In small groups, participants engaged in face-to-face discussions with other citizens, further expanding the range of perspectives and information to which participants were exposed.

Despite the intensity of this experience and the volume of information that participants were exposed to, substantive shifts in political views were the exception rather than the rule (Kohut, 1996; Mitofsky, 1996). In fact, of the 81 political opinions that were assessed before and immediately after the event, only 20 registered statistically significant change at the aggregate level; the remaining 60 political opinions were impervious to the intense barrage of political information (Kohut, 1996). And very few of these involved changes from one side of an issue to another. These findings suggest that even dramatic increases in political knowledge have modest effects on political opinions.

More tightly controlled experimental investigations have yielded similar evidence. In one recent demonstration, Tichy and Krosnick (2001) examined knowledge among the

general public about US energy policies. Specifically, they assessed how much ordinary citizens know about the costs and benefits of various modes of electricity generation, and they explored the implications of this knowledge for people's preferences about how electricity should be generated in the future. They found remarkably low knowledge levels: only about 30% of participants recognized that coal is the most prevalent source of electricity in the US. And the vast majority mistakenly believed that the production of solar energy is inexpensive (63%) or only moderately expensive (26%) when in fact it is very expensive to produce. Overall, they found that few people correctly understood how electricity is generated today. or the advantages and disadvantages of various methods of electricity generation.

Tichy and Krosnick (2001) then explored the consequences of increasing the amount of knowledge people possess about electricity generation. They presented a randomly selected subset of their participants with accurate information about electricity generation, specifically, about the percentage of America's electricity that is currently produced by various methods, the cost, type(s) and quantity of pollution each produces, and other notable advantages or drawbacks characteristic of each method. Subsequently, participants were asked about their preferences regarding specific energy policies. Other participants were asked the same set of questions about their energy policy preferences without the background information.

They found that providing participants with accurate information induced very modest opinion shifts. For example, increasing people's knowledge about electricity generation led to a modest increase in the proportion of people who supported the use of coal (21% *vs*. 11%), presumably because few people had realized that coal is as inexpensive as it is. Educating participants also led to a decrease in support for solar power generation (19% *vs*. 13%), probably because few people had realized that wind is considerably less expensive than solar power. Although statistically significant, the magnitude of these changes suggests that public information did little to alter people's preferences regarding electricity generation.

This pattern of findings has been corroborated in the domain of welfare policy (Kuklinski, Quirk, Jerit, Schwieder, & Rich, 2000). Most Americans are dramatically misinformed about basic facts relevant to the current welfare policy debate. In one recent survey, containing six factual questions about welfare, none of the questions was answered correctly by more than half of the participants, and only 3% of participants got more than half of the questions correct. Remarkably, however, providing people with accurate information about welfare had no impact on people's welfare policy preferences; they were no different for people who had and had not received the information (Kuklinski *et al*., 2000). Here too, people's attitudes seem not to be tightly bound to the knowledge they possess about the attitude object.

WHY SUCH MODEST EFFECTS?

Taken together, a diverse set of evidence suggests that even fairly drastic increases in the amount of political information people have about an object don't always lead to discernable changes in relevant attitudes or behaviors. This may seem at odds with the litany of powerful consequences of knowledge that we reviewed earlier, but the resolution lies in a clearer understanding of how knowledge operates.

Knowledge is a powerful enabler. It confers particular cognitive and behavioral abilities, facilitating a great number of tasks. But virtually all deliberate judgments or behaviors require more than ability alone—they also require sufficient levels of motivation. Motives exert an energizing influence, instigating, directing, and sustaining actions aimed at achieving currently salient goals. Without adequate motivation, even dramatic increases in ability will have little

impact on judgments or behavior. Unless people are already motivated to engage in the political process, interventions that increase knowledge alone are likely to have modest effects on political judgments and behavior.

Disentangling the impact of motivation and ability

All of this suggests that when an outcome (e.g., a particular judgment, the formation of an opinion, the enactment of a behavior) requires specific information and does not require the energizing and directive force of motivation, levels of political knowledge regulate the outcome. When an outcome requires motivation but does not require specific information, political knowledge will not regulate the outcome (though motivating factors will). And when an outcome requires the copresence of information and motivation, political knowledge will regulate the outcome in conjunction with a motivating force.

Recent evidence supports each of these contentions (Visser *et al*., 2004). For example, when people evaluate the fairness of media coverage of an issue, they often exhibit a "hostile media" bias, or the tendency to perceive that a balanced presentation of information on a controversial issue is biased against one's own side of the issue (Vallone, Ross, & Lepper, 1985).

This bias is driven at least partly by the fact that people spontaneously compare their own store of information about an issue to the information presented by the media. Because people tend to possess more attitude-congruent than attitude-incongruent information, even a balanced media presentation appears to have omitted more of the former than of the latter, producing the perception of a bias against one's own side of the issue. This suggests that possessing information, regardless of one's level of motivation, should regulate the hostile media bias. And indeed, people who are very knowledgeable about an issue perceive a much stronger hostile media bias than do people who are less knowledgeable about the issue (Visser *et al*., 2004). The amount of importance people attach to the issue, on the other hand, does not regulate the magnitude of the hostile media bias.

A different outcome produced the opposite pattern of results. When told that they would be evaluating a series of political candidates and given an opportunity to selectively expose themselves to information about each candidate, attitude importance (and not attitude-relevant knowledge) regulated the type of information people chose. For example, people who attached importance to the issue of capital punishment requested candidates' positions on that issue significantly more often than those who attached little importance to the issue. The volume of issue-relevant information stored in memory had no impact on selective exposure. Thus, attaching importance to the issue motivated participants to seek information that enabled them to use their attitudes when evaluating candidates, but possessing knowledge did not.

A third outcome revealed yet another pattern of results. Performing an attitude-expressive behavior requires sufficient motivation to do so, as well as sufficient knowledge to plan and execute appropriate behavioral strategies. And indeed, across two studies, attitude importance and attitude-relevant knowledge were both positively associated with increases in attitude-expressive behavior, but the combination of high importance and high knowledge was associated with a particularly pronounced surge in attitude-expressive behavior (Visser *et al*., 2004).

The consequences of knowledge, therefore, depend on the nature of the outcome. Knowledge confers a host of important cognitive and behavioral abilities, and for outcomes that depend solely on these abilities, knowledge has powerful consequences. Ability alone, however, is insufficient for many outcomes. For outcomes that are primarily driven by motivational forces, knowledge is quite inconsequential. And for outcomes that demand both ability and motivation, knowledge is a necessary but not a sufficient antecedent.

CORRELATION AND CAUSATION

Taken together, these findings raise an important caveat about interpreting past findings regarding the consequences of political knowledge. With exceedingly few exceptions, inferences about the implications of political knowledge for political opinions and behaviors have been based on observed correlations between levels of political knowledge and other variables. Political knowledge has been shown to correlate with factors such as political participation, tolerance, and ideological constraint, among other things (for a review, see Delli Carpini & Keeter, 1996).

The preferred explanation for these findings is that political knowledge causes a wide range of desirable outcomes, and such causal claims are ubiquitous in the literature. For example, Delli Carpini and Keeter (1996) conclude that political knowledge "boosts participation" (p. 224), "promotes a number of civic attitudes such as political interest and efficacy" (p. 224), leads citizens to develop more numerous, stable, and internally consistent attitudes' (p. 228), among other things.

The broad acceptance of these causal claims about the profound impact of political knowledge on the basis of correlational evidence is remarkable, particularly in light of the fact that other causal processes provide equally plausible accounts for the observed relations between political knowledge and other variables. Rather than knowledge "promoting" political interest or efficacy, for example, it is equally reasonable to suppose that being interested in politics or feeling politically efficacious motivates people to acquire political knowledge, reflecting the reverse causal mechanism. And rather than knowledge "boosting" political participation, it is entirely plausible that some third factor may produce both outcomes. We know, for example, that the importance people attach to politics is likely to inspire both knowledge acquisition and political participation. Thus, the relation between knowledge and participation could be entirely spurious, driven by their mutual relation to importance.

FUTURE DIRECTIONS

This discussion makes clear that a number of issues remain unresolved, and provides guidance for future research. Perhaps most fundamental is the need for greater clarity about precisely what kind of information is necessary for the successful execution of citizen duties (Krosnick, 1998; Kuklinski & Quirk, 2001; Lupia, in press). This poses a significant challenge, but it is one that the field must confront before real progress can be made toward understanding the antecedents of political knowledge as well as its consequences for the attitudes, beliefs, and behaviors of individuals.

Another high priority is the accumulation of more experimental evidence regarding the causal effects of political knowledge. Continuing to assess the correlations between measures of political knowledge and other variables is unlikely to yield important new insights regarding the consequences of knowledge. But directly manipulating political knowledge and tracing the implications for other outcomes and processes may well do so. Such investigations should also explore potential moderators of the impact of political knowledge. Its consequences are likely to vary depending on a host of other factors.

In particular, additional research is necessary to explore more fully when and how knowledge interacts with various motivational factors to influence behavior. Contributions of this sort would provide much more precise leverage for identifying the necessary and sufficient conditions under which political knowledge exerts its impact.

CONCLUSION

A wealth of evidence from decades of survey research suggests that most citizens know remarkably little about the political world, raising deep concerns among social scientists about the degree to which citizens' attitudes and beliefs reflect careful consideration of relevant political information. Indeed, evidence from the psychological

literature indicates that knowledge confers important cognitive abilities, many of which would seem to be important for meeting the obligations of democratic citizenship. Inferences about current levels of political knowledge among the general public and the impact of these knowledge levels on citizens' attitudes, beliefs, and behavior must be drawn with caution, however. A number of important conceptual and methodological limitations must be addressed before strong conclusions can be drawn about the antecedents and consequences of political knowledge.

REFERENCES

Baddeley, A. D., & Hitch, G. J. (1974). Working memory. In G. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (pp. 47–90). New York: Academic Press.

Bassili, J. N. (1996). Meta-judgmental versus operative indexes of psychological features: The case of measures of attitude strength. *Journal of Personality and Social Psychology, 71*, 637–653.

Berent, M. K., & Krosnick, J. A. (1995). The relation between political attitude importance and knowledge structure. In M. Lodge & K. McGraw (Eds.), *Political judgment: Structure and process* (pp. 91–110). Ann Arbor, MI: University of Michigan Press.

Boninger, D. S., Krosnick, J. A., & Berent, M. K. (1995). Origins of attitude importance: Self-interest, social identification, and value relevance. *Journal of Personality & Social Psychology, 68*, 61–80.

Boninger, D. S., Krosnick, J. A., Berent, M. K., & Fabrigar, L. R. (1995). The causes and consequences of attitude importance. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 159–189). Mahwah, NJ: Erlbaum.

Clark, P., & Fredin, E. (1978). Newspapers, television and political reasoning. *Public Opinion Quarterly, 42*, 143–160.

Clark, P., & Kline, F. G. (1974). Media effects reconsidered: Some new strategies for communication research. *Communication Research, 1*, 224–240.

Cooke, N. J., Atlas, R. S., Lane, D. M., & Berger, R. C. (1993). Role of high-level knowledge in memory for chess positions. *American Journal of Psychology, 106*, 321–351.

Craik, F. I. M. (1977). Depth of processing in recall and recognition. In S. Dornic (Ed.), *Attention and performance VI* (pp. 679–697). Hillsdale, NJ: Erlbaum.

Craik, F., & Lockhart, R. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior, 11*, 671–684.

Delli Carpini, M., & Keeter, S. (1997). *What Americans know about politics and why it matters*. New Haven: Yale University Press.

DiClemente, R. J., Forrest, K. A., Mickler, S., & Principal Site Investigators. (1990). College students' knowledge about AIDS and changes in HIV-preventative behaviors. *AIDS Education and Prevention, 2*, 201–212.

Downs, A. (1957). *An economic theory of democracy*. New York: Addison Wesley.

Eckhardt, B. B., Wood, M. R., & Jacobvitz, R. S. (1991). Verbal ability and prior knowledge: Contributions to adults' comprehension of television. *Communication Research, 18*, 636–649.

Eveland, W. P., Shah, D. V., & Kwak, N. (2003). Assessing causality in the cognitive mediation model: A panel study of motivations, information processing, and learning during campaign 2000. *Communication Research, 30*, 359–386.

Fazio, R. H., & Zanna, M. P. (1981). Direct experience and attitude-behavior consistency. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 14, pp. 161–202). San Diego, CA: Academic Press.

Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behavior. *Psychological Bulletin, 11*, 455–474.

Fishkin, J. S. (1991). *Democracy and deliberation: New directions for democratic reform*. New Haven, CT: Yale University Press.

Fishkin, J. S. (1995). *The voice of the people: Public opinion and democracy*. New Haven: Yale University Press.

Fiske, S. T., Lau, R. R., & Smith, R. A. (1990). On the varieties and utilities of political expertise. *Social Cognition, 8*, 31–48.

Graber, D. A. (1980). *Mass media and American politics*. Washington, DC: Congressional Quarterly Press.

Graber, D. A. (1990). Seeing is remembering: How visuals contribute to learning from television news. *Journal of Communication, 40*, 134–55.

Hambrick, D. Z. (2003). Why are some people more knowledgeable than others? A longitudinal study of knowledge acquisition. *Memory and Cognition, 31*, 902–917.

Hedley, A. A., Ogden, C. L., Johnson, C. L., Carroll, M. D., & Curtin, L. R. (2004). Overweight and obesity among US children, adolescents and adults, 1999–2002. *Journal of the American Medical Association, 291*, 2847–2850.

Helweg-Larsen, M., & Collins, B. E. (1997). A social psychological perspective on the role of knowledge

about AIDS in AIDS prevention. *Current Directions in Psychological Science, 6*, 23–26.

Holbrook, A. L., Berent, M. K., Krosnick, J. A., Visser, P. S., & Boninger, D. (2005). Attitude importance and the accumulation of attitude-relevant knowledge in memory. *Journal of Personality and Social Psychology, 88*, 749–769.

Kahneman, D. (1973). *Attention and Effort*. Englewood Cliffs, NJ: Prentice-Hall.

Kallgren, C. A., & Wood, W. (1986). Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology, 22*, 328–338.

Kohut, A. (1996). The big poll that didn't. *Poll Watch, 4*, 2–3.

Krosnick, J. A. (1990). American's perceptions of presidential candidates: A test of the projection hypothesis. *Journal of Social Issues, 46*, 159–182.

Krosnick, J. A. (1998). Review of "What Americans know about politics and why it matters" by M. X. Delli Carpini and S. Keeter. *Annals of the American Academy of Political and Social Science, 559*, 189–191.

Krosnick, J. A., Boninger, D. S., Chuang, Y. C., Berent, M. K., & Carnot, C. G. (1993). Attitude strength: One construct or many related constructs? *Journal of Personality and Social Psychology, 65*, 1132–1149.

Krugman, H. E., & Hartley, E. L. (1970). Passive learning through television. *Public Opinion Quarterly, 34*, 184–190.

Kuklinski, J. H., & Quirk, P. J. (2001). Conceptual foundations of citizen competence. *Political Behavior, 23*, 285–311.

Kuklinski, J. H., Quirk, P. J., Jerit, J., Schwieder, D., & Rich, R. F. (2000). Misinformation and the currency of democratic citizenship. *Journal of Politics, 62*, 790–816.

Lodge, M., Steenbergen, M., & Brau, S. (1995). The responsive voter: Campaign information and the dynamics of candidate evaluation. *American Political Science Review, 89*, 309–326.

Lupia, A. (in press). How elitism undermines the study of voter competence. *Critical Review*.

Lupia, A., & McCubbins, M. (1998). *The democratic dilemma: Can citizens learn what they need to know?* New York: Cambridge University Press.

Luskin, R. C. (1990). Explaining political sophistication. *Political Behavior, 12*, 331–361.

Lutkus, A. D., Weiss, A. R., Campbell, J. R., Mazzeo, J. & Lazer, S. (1999). *The NAEP 1998 Civics Report Card for the nation*. (NCES 2000-457). Washington, DC: US Department of Education.

Mann, J. M., Tarantola, D. J. M., & Netter, T. W. (1992). *AIDS in the world*. Cambridge, MA: Harvard University Press.

McGraw, K. M., & Pinney, N. (1990). The effects of general and domain-specific expertise on political memory and judgment. *Social Cognition, 8*, 9–30.

McGuire, W. J. (1986). The myth of massive media impact: Savagings and salvagings. In G. Comstock (Ed.), *Public communication and behavior* (Vol. 1, pp. 173–257). San Diego, CA: Academic Press.

Meinhold, J. L., & Malkus, A. J. (2005). Adolescent environmental behaviors: Can knowledge, attitudes, and self-efficacy make a difference? *Environment and Behavior, 37*, 511–532.

Merkel, D. (1996). The polls – Review. The National Issues Convention Deliberative Poll. *Public Opinion Quarterly, 60*, 588–619.

Mitofsky, W. J. (1996). The emperor has no clothes. *The Public Perspective, 7*, 17–19.

Muthukrishnan, A.V., Pham, M. T., & Mungale, A. (1999). Comparison opportunity and judgment revision. *Organizational Behavior and Human Decision Processes, 80*, 228–251.

Nie, N., Junn, J., & Stehlik-Barry, K. (1996). *Education and democratic citizenship in America*. Chicago: University of Chicago Press.

Page, B. I. (1978). *Choices and echoes in presidential elections*. Chicago: University of Chicago Press.

Patterson, T. E. (1980). *The mass media election*. New York: Praeger.

Patterson, T. E., & McClure, R. D. (1976). *The unseeing eye: The myth of television power in national elections*. New York: Putnam.

Paull, G., & Glencross, D. (1997). Expert perception and decision making in baseball. *International Journal of Sport Psychology, 28*, 35–56.

Perse, E. M. (1990). Media involvement and local news effects. *Journal of Broadcasting and Electronic Media, 34*, 17–36.

Popkin, S. L., & Dimock, M. A. (1999). Political knowledge and citizen competence. In S. L. Elkin and K. E. Soltan (Eds.), *Citizen competence and democratic institutions* (pp. 117–146). University Park, PA: Pennsylvania State University Press.

Prior, M., & Lupia, A. (2005, August/ September). *What citizens know depends on how you ask them: Experiments on political knowledge under respondent-friendly conditions*. Paper presented at the 101st annual meeting of the American Political Science Association, Washington, DC.

Prislin, R. (1996). Attitude stability and attitude strength: One is enough to make it stable. *European Journal of Social Psychology, 26*, 447–477.

Ratneshwar, S., & Chaiken, S. (1991). Comprehension's role in persuasion: The case of its moderating effect on the persuasive impact of source cues. *Journal of Consumer Research, 18*, 52–62.

Recht, D. R., & Leslie, L. (1988). Effect of prior knowledge on good and poor readers. *Journal of Educational Psychology, 80,* 16–20.

Roberts, D. F., & Maccoby, N. (1985). Effects of mass communication. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 2, pp. 539–598). New York: Random House.

Robinson, J. P., & Levy, M. R. (1986). *The main source: Learning from television news.* Beverly Hills, CA: Sage.

Rogers, T. F., Singer, E., & Imperio, J. (1993). AIDS - An update. *Public Opinion Quarterly, 57*, 92–114.

Rokeach, M. (1968). *Beliefs, attitudes and values*. San Francisco: Jossey-Bass Inc.

Schneider, W., Gruber, H., Gold, A., & Opwis, K. (1993). Chess expertise and memory for chess positions in children and adults. *Journal of Experimental Child Psychology, 56*, 328–349.

Tewksbury, D., Weaver, A., & Maddex, B. (2001). Accidentally informed: Incidental news exposure on the World Wide Web. *Journalism & Mass Communication Quarterly, 78*, 533–554.

Tichy, M. P., & Krosnick, J. A. (2001). *Public perceptions of electricity generation: An exploratory study.* Unpublished manuscript, Ohio State University, Columbus, OH.

Tyler, S. W., Hertel, P. T., McCallum, M. C., & Ellis, H. C. (1979). Cognitive effort and memory. *Journal of Experimental Psychology: Human Learning and Memory, 5*, 607–617.

Vallone, R. P., Ross, L., & Lepper, M. R. (1985). The hostile media phenomenon: Biased perception and perceptions of media bias in coverage of the Beirut massacre. *Journal of Personality and Social Psychology, 49*, 577–585.

Visser, P. S. (1998). *Assessing the structure and function of attitude strength: Insights from a new approach.* Unpublished doctoral dissertation, Ohio State University.

Visser. P. S., Krosnick, J. A., & Norris, C. M. (2004). *Challenging the common-factor model of strength-related attitude attributes: Contrasting the antecedents and consequences of attitude importance and attitude-relevant knowledge.* Unpublished manuscript, University of Chicago, Chicago, IL.

Wood, W. (1982). Retrieval of attitude-relevant information from memory: Effects on susceptibility to persuasion and on intrinsic motivation. *Journal of Personality & Social Psychology, 42*, 798–810.

Wood, W., Kallgren, C. A., & Preisler, R. M. (1985). Access to attitude-relevant information in memory as a determinant of persuasion: The role of message features. *Journal of Experimental Social Psychology, 21*, 73–85.

Wood, W., Rhodes, N., & Biek, M. (1995). Working knowledge and attitude strength: An information-processing analysis. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 283–313). Mahwah, NJ: Lawrence Erlbaum Associates.

Zaller, J. (1992). *The nature and origins of mass opinion*. Cambridge University Press.

Zukin, C., & Snyder, R. (1984). Passive learning: When the media environment is the message. *Public Opinion Quarterly, 48*, 629–638.