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CHAPTER 5

The Relation between Political Attitude Importance and Knowledge Structure

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Political scientists have long maintained an interest in the structure of cognitive elements in the minds of citizens. Certainly the most prominent literature on this topic has examined the degree to which citizens' attitudes on specific policy issues are organized or structured by overarching ideological principles. It is now clear that some citizens evidence substantial ideological organization, while others manifest little, if any (for a review, see, e.g., Judd and Krosnick 1989). Important motivation for this literature has come from the belief that the structure of an individual's attitudes is influenced by political context (Nie, Verba, and Petrocik 1979), and that such structure has important implications regarding political decision making and behavior. Thus, differences between voters in terms of attitude structure can help us understand differences in political information-processing and action patterns.

More recently, political psychologists have become interested in a different sort of cognitive structure: the organization of beliefs about a single political object. This interest has been partially sparked by growing attention in social and cognitive psychology to information processing and knowledge structures. In political science, the most often used concept in this area has been that of schemas. Although some political psychological analyses using the schema concept have made little use of the structural notion inherent in it (see, e.g., Kuklinski, Lusk, and Bolland 1991), others have paid greater attention to belief structure, to valuable ends (e.g., McGraw, Pinney, and Neumann 1991; Lusk and Judd 1988). Our goal in this chapter is to bring together the notions of cognitive structures and knowledge organization with the concerns and ideas of attitude theories in order to yield new and useful insights into political attitude functions.

Specifically, we will explore the relation between one dimension of political attitudes, attitude importance, and the organization of attitude-relevant knowledge in memory. And our focus here is on one particular type of political attitude: preferences regarding the policies that government

should and should not implement. We will first introduce the concepts of attitude importance and knowledge organization and suggest why they might be related in the case of policy attitudes. Then, we will describe the results of four experiments that explored the relation between policy attitude importance and knowledge organization.

Attitude Importance

Political scientists and psychologists have come to recognize, during the last two decades especially, that all attitudes are not created equal: some are stronger than others. Although strength has not been precisely defined over the years, Petty and Krosnick (n.d.) have recently proposed a definition that seems faithful to most prior uses of this term. According to their perspective, strong attitudes have four defining features: (1) they are quite resistant to change; (2) they are highly stable over time; (3) they have strong impact on the processing of relevant incoming information; and (4) they have strong impact in shaping relevant behaviors.

Several different attributes of attitudes have been used over the years to differentiate strong attitudes from weak ones. These include affective-cognitive consistency (Rosenberg 1956, 1968), ego-involvement (Sherif and Cantril 1947; Sherif, Sherif, and Nebergall 1965), affective intensity (Cantril 1944, 1946), certainty (Budd 1986; Budd and Spencer 1984; Cantril 1944; Davidson, Yantis, Norwood, and Montano 1985; Ewing 1942; Holtz and Miller 1985; Krosnick and Schuman 1988), and extremity (Ewing 1942; Judd and Johnson 1981; Tannenbaum 1956; Tesser 1978). In general, research investigating these dimensions has found that attitudes typified by high affective-cognitive consistency, intensity, certainty, and so on, do indeed tend to be more crystallized and consequential than weak attitudes (for a detailed review, see Krosnick, Boninger, Chuang, Berent, and Carnot, n.d.).

In this chapter, we focus on one such dimension of attitude strength: attitude importance. Attitude importance refers to the subjective personal importance an individual attaches to an attitude object. Two components of this definition merit some brief attention. First, attitude importance is subjectively determined. Although the objective relevance of an attitude object to an individual's life often influences attitude importance, such relevance does not define importance. That is, people can attach a great deal of importance to issues that don't affect them, and they can attach very little importance to issues that do involve them. Second, importance, as we study it, is inherently personal. It deals with how important an attitude object, such as a political issue, is to the individual who possesses an attitude toward it. As such, attitude importance does not involve judgments of the significance of the object for people in general. Thus, even though a person may recog-

nize that an issue is important for the country as a whole, her or his attitude will be described as unimportant if she or he does not care about the issue personally.

Attitude importance, as a subjective and personal dimension of attitude strength, has been the focus of a substantial body of research (Cantril 1944; Festinger 1957; Krosnick 1988a, 1988b, 1989, 1990b; Madsen 1978; Tourangeau, Rasinski, Bradburn, and D'Andrade 1989a, 1989b). As with other attitude dimensions related to strength, the consequences of attitude importance can be observed across a variety of domains. More important attitudes lead to better memory for relevant information (Berent 1990), are more stable over time (Hahn 1970; Krosnick 1988b; Schuman and Presser 1981), are more resistant to change (Borgida and Howard-Pitney 1983; Fine 1957; Gorn 1975; Howard-Pitney, Borgida, and Omoto 1986; Powell 1977; Rhine and Severance 1970), are more accessible in memory (Krosnick 1989), and have more influence on perceptions of candidates' attitudes (Granberg and Seidel 1976; Holtz and Miller 1985; Krosnick 1988a; Marks and Miller 1982), on preferences for particular candidates (Aldrich and McKelvey 1977; Clore and Baldridge 1968; Granberg and Holmberg 1986; Krosnick 1988a; Tedin 1980), on other political attitudes (Budd 1986; Hoetler 1985; Judd and Krosnick 1989; Kaplan 1980; Young, Borgida, Sullivan, and Aldrich 1987), and on political behavior (Jaccard and Becker 1985; Krosnick 1988a; Rokeach and Kliejunas 1972; Schuman and Presser 1981).

Attitude Importance and Elaborative Processing

In this chapter, we explore another possible consequence of attitude importance that may, in part, account for some of these previously documented effects of importance. Specifically, we suspect that attitude importance may inspire deeper processing of attitude-relevant information, which, in turn, yields more refined organization of that information in memory. To explain the basis for this hypothesis, we must begin by considering the various ways in which people can process incoming information.

A popular assumption among social and cognitive psychological researchers is that people are limited information processors (e.g., Fiske and Taylor 1991; Schneider and Shiffrin 1977; Shiffrin and Schneider 1977; Taylor 1981; Tversky and Kahneman 1974; Wyer and Srull 1986). That is, people are unable (or perhaps unwilling) to expend the cognitive effort necessary to extensively process all information to which they are exposed. Consequently, individuals may extensively and deeply process some select classes of information, employ heuristics or other shortcuts when processing other classes of information, and completely ignore still other classes of information.

Different levels of information processing require different amounts of cognitive effort. At the most superficial level, individuals may simply perceive the presence of a stimulus. Processing information at such a shallow level requires very little cognitive effort. At a somewhat deeper level, individuals may both perceive a stimulus and interpret its meaning, the latter step requiring more effort. At a still deeper level, individuals may perceive, interpret, and evaluate stimulus information. At this deep level of processing, which requires even more effort, individuals elaborate on new information by relating it to the knowledge they have already stored in memory (Craik and Tulving 1975; Reder and Anderson 1980; Wyer and Srull 1980, 1986). In effect, they are asking themselves: Do I already know this? How does it compare to things I already know? Does it support or challenge my attitude?

If people are, indeed, cognitive misers, it follows that only individuals with unusual motivation will engage in such elaborative processing (see, e.g., Petty and Cacioppo 1986). A natural question is then: When are people motivated to engage in effortful processing? One possible answer is that people will do so when a stimulus is relevant to an attitude that the individual considers highly personally important. As we noted earlier, attaching personal importance to an attitude leads individuals to expend extraordinary effort in using that attitude when perceiving others' attitudes, when forming attitudes toward others, and when performing relevant behaviors. By the same token, personal importance may lead individuals to expend greater cognitive effort when processing new relevant information.

One set of recent studies suggests that individuals are, indeed, more motivated to extensively and elaboratively process new information when it is relevant to personally important attitudes. Berent (1990) found that individuals recalled and recognized information relevant to important attitudes better than they recalled and recognized information relevant to unimportant attitudes. Furthermore, this relation between information relevance and memory was mediated by selective elaboration of attitude-relevant information. When the opportunity for elaboration was removed, the memorial advantage of information relevant to important attitudes disappeared. Thus, when presented with several pieces of information concerning different political issues, individuals apparently devote more cognitive resources to the elaboration of information that is relevant to personally important attitudes.

The Organizational Consequences of Elaboration

Our primary interest in this chapter is in the possibility that this selective elaboration influences how political information becomes organized in mem-

ory. In order to understand this possible effect, we must first establish a model of memorial organization. In this context, we have found it most useful to think in terms of the associative network conceptualization popular among cognitive psychologists (Anderson 1983; Anderson and Bower 1973; Collins and Loftus 1975; Collins and Quillian 1969; Quillian 1969). Within this framework, knowledge organizations are composed of two basic components. First, knowledge organizations contain individual pieces of knowledge, defined in the most generic sense. A single piece of knowledge may refer to any of several constructs, such as the cognitive representation of an object, a piece of factual information, a belief, or some value of a dimension. Second, knowledge organizations contain links between these individual pieces of knowledge.

Links between individual pieces of knowledge are not built randomly. Rather, they are built between pieces of knowledge that an individual recognizes to be somehow related to one another by virtue of relevance to some dimension. For example, one might believe that people who are antiabortion are typically old; one might also believe that antiabortion people are typically religious. Thus, these two beliefs might be perceived to be related, by virtue of the fact that they both refer to characteristics of people who oppose abortion. Two such beliefs would then be linked in memory to a node representing the characteristic or dimension they have in common (i.e., relevance to the characteristics of antiabortionists). This dimension node would then be linked to the node representing the attitude object. In this way, beliefs and factual information about an object that share some value of a dimension are linked to the object indirectly, via their links to the dimension.

To understand this notion more graphically, in the case of political attitudes, consider individuals whose knowledge about an object is poorly organized. In the extreme, such individuals have not noted any relations among the beliefs and pieces of information they have about an object. Figure 1 illustrates how a person might store his or her knowledge about the attitude object of abortion in this fashion. The person has several pieces of knowledge about abortion, but has not noted that some of them are somehow related to one another. Consequently, dimensions around which other individuals might organize knowledge relevant to abortion are absent from this individual's knowledge structure. Beliefs and pieces of information are linked only with the attitude object.

In contrast to this scenario, consider an individual whose knowledge about abortion is highly organized. Figure 2 illustrates how the same bits of knowledge included in the preceding illustration might be stored in a more structured fashion. Here, the beliefs and pieces of information are organized around a variety of dimensions: philosophical arguments, rights

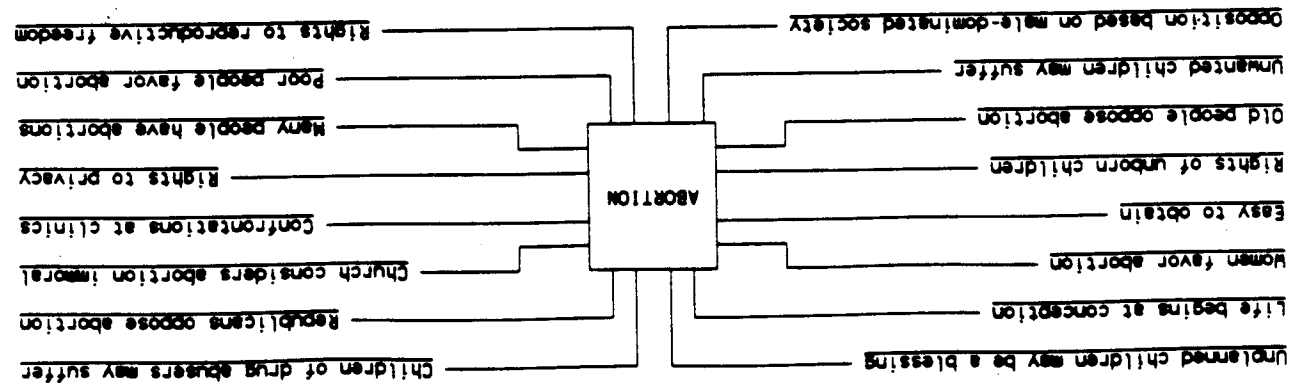


Fig. 1. A hypothetical unorganized knowledge structure

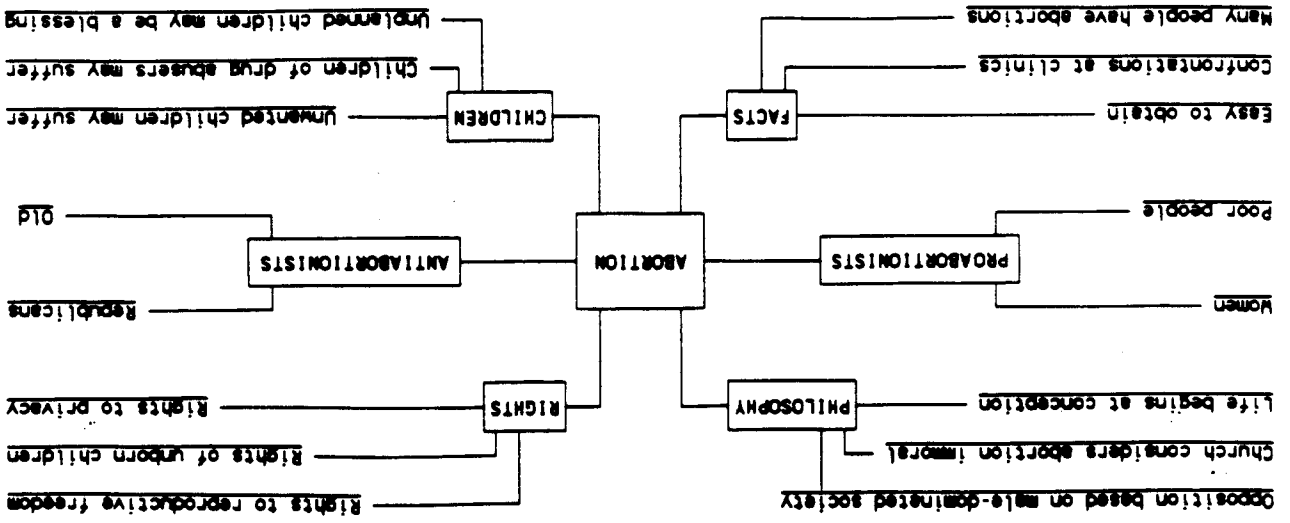


Fig. 2. A hypothetical organized knowledge structure

involved, typical proabortionists, typical antiabortionists, veridical facts, and implications involving children. Thus, within this framework, more organization refers to the use of more dimensions to organize subjectively related beliefs and information one has about an object.

This sort of refined organization is only likely to evolve if a person spends a great deal of time thinking about the information. Such cognitive elaboration presumably involves evaluating and relating new information to knowledge already stored in memory. The more one thinks about a new piece of information, the more likely he or she is to recognize what it has in common with previously stored knowledge. As a result, the person may incorporate the new information into the structure, either by linking the information to existing nodes or by linking it to newly-formed dimension nodes. All other things equal, then, spending more time elaborating on information relevant to some object should yield more stored relations between pieces of information. Therefore, if attitude importance does, indeed, inspire deeper processing of relevant incoming information, it should also yield more elaborate organization of relevant knowledge stored in memory.

Assessing Knowledge Organization

In order to test this hypothesis, we needed to select some method(s) with which to assess the extent and patterns of knowledge organization. Previous researchers have generally adopted one of three approaches to doing so. The first examines how easily people are able to use stored knowledge (e.g., Hymes 1986; Pratkanis 1989). Presumably, when knowledge is stored in better-organized structures, tasks requiring use of that knowledge should be performed more quickly and consistently. This is so because organizational nodes in elaborate knowledge structures should direct memory searches to needed subsets of the individual's total knowledge. Thus, by enabling the individual to ignore other, irrelevant subsets of his or her total knowledge, this type of organization may enable more efficient and reliable searches. In contrast, unorganized knowledge structures offer no guides or clues indicating how to most efficiently find the desired information. Consequently, searching for a needed piece of knowledge in an unorganized structure is likely to take more time, and may well yield different conclusions on different occasions.

A second method used to assess knowledge organization focuses on the order in which pieces of information are retrieved from memory. This order is presumed to reflect how that knowledge is stored (see, e.g., Lusk and Judd 1988; McGraw and Pinney 1990; McGraw, Pinney, and Neumann 1991; McGraw and Steenbergen in this volume; Ostrom, Pryor, and Simpson 1981; Rahn in this volume). Items linked to a common dimen-

sional node in a cognitive structure ought to be generated close to each other when people are asked to list all of their knowledge on a topic. One can therefore assess how organized stored items are by examining how closely related items are generated.

The third common method for assessing knowledge organization examines the way in which people classify pieces of stored knowledge. According to this approach, the manner in which a person sorts, groups, or otherwise structures pieces of information reflects relations that exist among them in memory (Conover and Feldman 1984; Scott, Osgood, and Peterson 1979; Tourangeau, Rasinski, and D'Andrade 1991). Individuals who report more independent sources of relations among knowledge bits presumably have more dimensional nodes organizing them in memory.

To evaluate the hypothesis regarding attitude importance outlined above, we used all three of these methods. Each one has its own shortcomings and alternative explanations that may account for its results. But when all three methods support a consistent and sensible set of conclusions about memory organization, one can have greater confidence in the validity of those conclusions. Our first three studies, therefore, used each of these methods to test the general proposition that attitude importance is associated with greater organization of attitude-relevant knowledge.

An Initial Test: Inference Speed and Consistency

Our first study explored the relation between political-attitude importance and knowledge organization by examining facility at making inferences. To illustrate our approach more graphically, suppose a person whose knowledge about abortion is unorganized (as in fig. 1) is asked to infer how likely it is that an elderly person favors legalized abortion. In order to make this judgment, he or she may search through knowledge relevant to abortion for any information about elderly people. Given that this search is likely to begin at the abortion node, there are over a dozen different directions the person can search in, and there are no guides or clues indicating how to most efficiently find the desired information. Consequently, searching for a specific piece of knowledge in an unorganized structure may take a relatively large amount of time, and may well yield different conclusions on different occasions.

In contrast, suppose we ask a person whose knowledge is well organized (as in fig. 2) to make the same inference. The better organization is likely to help the person engage in a very efficient memory search. He or she may have previously observed that people with certain characteristics, such as women and poor people, tend to favor legalized abortion, while other people, with other characteristics, tend to oppose abortion. Having

previously noted and stored these relations, the task of finding the desired piece of knowledge is significantly simplified. The search may be directed first to the "proabortionists" node, around which characteristics typical of those who favor abortion are stored. If the sought-after information is not found here, the search may be directed to the "antiabortionists" node. The ability of dimensional nodes to direct memory searches may, thus, enable an individual to ignore some areas of the knowledge structure, while focusing attention on others. Therefore, this type of organization may enable a more efficient search and therefore perhaps a more reliable one, as well.

In our first study, subjects made several inferences relevant to attitudes on political issues, and we viewed the speed and consistency with which these inferences were made as indicators of knowledge organization. If attitude importance is related to knowledge organization, then inferences involving important attitudes should be made more quickly and consistently than inferences involving unimportant attitudes.

Subjects made two visits to our laboratory to complete three tasks. During the first visit, subjects completed an inference task, in which they indicated the likelihood that various demographic characteristics or social category memberships were associated with different attitudes on five political issues. Approximately twenty-four hours later, subjects completed the same inference task again, and filled out a questionnaire assessing the importance of their own attitudes on the five political issues.

For the inference tasks, subjects were seated in front of an IBM micro-computer in individual cubicles. Subjects read instructions explaining that phrases describing personal characteristics would appear on the computer screen. When the first characteristic (referred to as a "stimulus phrase") appeared, they were told to think about someone who possessed that characteristic. After the second characteristic (referred to as a "target phrase") appeared, they were instructed to decide whether it was likely or unlikely that a person who possessed the first characteristic would also possess the second one. Subjects were instructed to depress one of two labeled keyboard keys to indicate their responses. The computer recorded subjects' responses and their latencies (the length of time between a target phrase's appearance and a subject's response).

On half of the trials, the stimulus phrase indicated an attitude position (such as proabortion or anti-gun control), and the target phrase denoted membership in a social category (such as Republican or poor). On the other half of the trials, stimulus phrases denoted social category membership, and target phrases indicated attitude positions.

We used the response latency data from the inference task to compute measures of inference speed. Subjects made a total of four hundred inferences across the two inference tasks, eighty on each of five issues: legalized

abortion, capital punishment, legalization of marijuana, gun control, and nuclear energy. The eighty response latencies for each issue were averaged and subjected to a logarithmic transformation to normalize their distributions (see Fazio 1990).

Measures of response consistency were also computed from the inference task data. Subjects saw forty unique attitude position-personal characteristic permutations for each issue (2 attitude positions \times 10 personal characteristics \times 2 target types). Each of those permutations was presented twice, once on the first day and once on the second day. A measure of inference consistency was computed by summing the number of times a subject made the same inference for the same permutation on each issue. Thus, a value of forty indicates that all forty inferences were made identically on the two days, whereas a value of zero indicates that none of the inferences were made identically.

Measures of attitude importance were computed for each issue by summing responses to two questionnaire items that asked how personally important each issue was to subjects, and how much they cared about the issue.

In order to test for associations between attitude importance and inference speed and consistency, we computed two regression equations. In these equations, the dependent variable (either inference speed or inference consistency) was regressed on attitude importance, while controlling for individual and issue differences. This was done by adding dummy variables representing the 134 subjects and the 5 issues to the equations. Thus, the coefficient for attitude importance indicates the association between importance and the target variable combining across the 5 issues.

As expected, subjects made inferences more quickly when they involved personally important attitudes than when they involved unimportant attitudes ($\beta = -.04$, $p < .05$, $N = 135$). Also as expected, subjects were more consistent in their inferences when the inferences involved personally important attitudes ($\beta = .09$, $p < .01$, $N = 135$). Quick and consistent inferences suggest that subjects were able to locate and access relevant knowledge more easily when the knowledge was relevant to an important attitude, a consequence that would be expected of greater organization. Therefore, these results support the hypothesis that knowledge relevant to important attitudes is better organized.

These findings resemble some of our previous evidence regarding the correlates of attitude importance. As we mentioned above, important attitudes are more stable over long periods of time during the course of daily life (Krosnick 1988b), and they are reported more quickly (Krosnick 1989). Our first study of organization goes a step further, by showing that inferences about others that are relevant to more important attitudes are also more stable and accessible.

A Second Test: Proximity of Related Knowledge Bits

Although the results of our first study are certainly consistent with this hypothesis, there are alternative explanations for the observed results. For example, the same associations between importance and inference speed would have been obtained if knowledge relevant to important attitudes was simply more accessible than knowledge relevant to unimportant attitudes. That is, it may be that the links between knowledge bits and the central object node are stronger, thereby making the individual bits more accessible. Or it is possible that subjects are simply more practiced at performing inferences relevant to important attitudes, and are therefore quicker and more efficient in doing so (see, e.g., Smith 1989; Smith and Lerner 1986).

Therefore, in order to further explore the relation between attitude importance and knowledge organization, we conducted a second study, using a different methodology. Specifically, we assessed how organized stored items are by examining how close to each other related items are generated in an undirected knowledge-listing task.

Subjects in our second study completed three tasks. First, they listed the first twelve pieces of knowledge that came to mind when thinking about either abortion, capital punishment, or gun control (determined randomly). Next, subjects identified up to twelve pairs of knowledge bits that they felt were similar in some important respects, and they wrote short phrases describing what each pair had in common. Finally, subjects completed a short questionnaire measuring the personal importance of their attitudes on all three issues.

We computed measures of attitude importance for each issue, as in the previous study, and we used data generated by the pairing task to compute measures of knowledge organization. These measures were computed by looking at what pieces of knowledge subjects indicated were similar, and when those pieces were generated during the listing task. If two pieces of knowledge were psychologically related, those pieces should have been written down near each other during the initial listing task. Consequently, we measured organization by computing the average number of pieces of information listed in between the two items in each pair of related knowledge bits. The fewer such in-between pieces of information, the more organized the knowledge presumably was.

In order to assess the relation between importance and knowledge organization, we again computed regression equations pooling across the various issues.¹ As expected, the combined association between importance and the average distance between paired items was negative and marginally significant ($\beta = -.20$, $p < .10$, $N = 86$). This indicates that subjects who considered an issue to be important listed psychologically related pieces of

knowledge closer to each other than did subjects who considered an issue to be unimportant. Thus, this result is consistent with the hypothesis that knowledge relevant to important attitudes is better organized than knowledge relevant to unimportant attitudes.

A Third Test: Assessing Organizational Dimensions

Taken together, our first two experiments provide evidence that attitude importance is related to knowledge organization. Using markedly different methods for measuring knowledge organization, both studies indicated that knowledge relevant to important attitudes is more organized in memory. Our third study tested this hypothesis using yet another method for measuring knowledge organization: one that assesses the number of organizational dimensions underlying subjects' sorting of knowledge into groups.

In this study, subjects completed four tasks. First, subjects listed their knowledge about abortion or capital punishment (determined randomly). Second, subjects formed groups of pieces of knowledge that they felt were related to one another in some respect. For each group, subjects provided a short description of why those pieces of knowledge were related. Third, subjects rated how well all of the knowledge bits were described by each descriptor phrase. Thus, subjects generated a matrix of pieces of knowledge by number of groups in which an entry indicated the applicability of a descriptor to a piece of knowledge. Finally, subjects indicated the importance of their attitudes on both issues.

We assessed the number of independent dimensions necessary to account for subjects' grouping and rating of their knowledge, using the dimensionality measure developed by Scott, Osgood, and Peterson (1979).² To compute this measure, intrasubject correlation matrices were calculated from subjects' rating data. That is, for each subject, we computed a matrix of correlations between group descriptors. A large correlation between two descriptors indicated that, for that subject, those two descriptors were redundant. The sum of the squared intrasubject correlations is, thus, an indicator of the redundancy among groups formed by subjects. Our measure of independent dimensions used by a subject increased with the number of groups formed, and decreased with the amount of redundancy between these groups (as measured by the sum of the squared intrasubject correlations). When there is complete redundancy among all groups, our measure, D , equals 1, the minimum possible value. When there is no redundancy among groups, D equals the number of groups formed; thus D has no necessary maximum value.

As expected, more important attitudes were associated with more organizing dimensions. In a regression equation, pooling across the two issues, the combined association between importance and number of dimensions was significant and positive ($\beta = .24$, $p < .05$, $N = 117$).³ This result again

supports the hypothesis that the knowledge structures accompanying important attitudes are more elaborately organized than the structures accompanying unimportant attitudes.

Agreement-Based Knowledge Organization

Using three different methods, we have seen evidence supporting this hypothesis. However, these studies do not indicate precisely which organizing dimensions become more prominent under conditions of high importance. Of the many candidates, one that has received a great deal of attention is attitudinal agreement (Hymes 1986, Judd and Kulik 1980, McGraw and Pinney 1990; Pratkanis 1989). Knowledge organized in terms of attitudinal agreement is clustered into two groups: knowledge that agrees with one's attitude, and knowledge that disagrees with one's attitude. In the extreme, an individual may use only an agreement dimension for organizing his or her knowledge.

An agreement-based knowledge structure for someone who favors legalized abortion is illustrated in figure 3. Here, pieces of knowledge that agree with, or support, his or her attitude (such as "Women have rights to reproductive freedom," and "Unwanted children may suffer") are linked to the "agree" node, whereas bits of knowledge that disagree with, or challenge, his or her attitude (such as "Life begins at conception") are linked with the "disagree" node. Because information that neither agrees nor disagrees with the individual's attitude (such as "Abortions are easy to obtain") cannot be readily linked to one of these nodes, such information is linked directly to the attitude object.

A number of studies suggest that agreement-based organization may vary systematically across individuals. For example, political experts have been shown to be more likely than novices to exhibit agreement-based organization of knowledge about policy issues (McGraw and Pinney 1990) and knowledge about political actors (Lusk and Judd 1988). However, other research has found political expertise to be unrelated to agreement-based organization of knowledge about candidates (McGraw, Pinney, and Neumann 1991), even under conditions conducive to such organization (McGraw and Steenbergen in this volume). Agreement-based organization has also been shown to be positively associated with attitude extremity (Hymes 1986). However, because attitude importance is essentially independent of political expertise (Judd and Krosnick 1989), and only moderately associated with attitude extremity (Krosnick et al. 1993), it is difficult to use these findings to anticipate how attitude importance will be related to agreement-based clustering of knowledge.

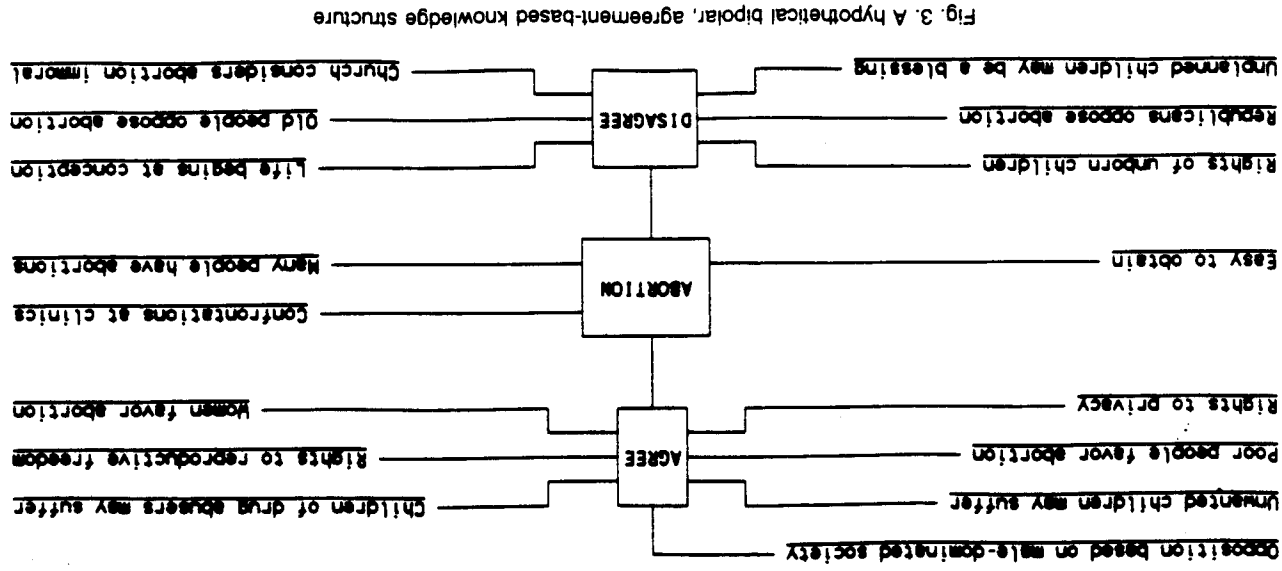


Fig. 3. A hypothetical bipolar, agreement-based knowledge structure

A Test of Agreement-Based Organization

In order to investigate the relation between importance and the organizational centrality of attitudinal agreement, we conducted a final study. As in our second study, we measured knowledge structure by examining the order in which knowledge is retrieved from memory in an undirected knowledge-listing task. In this study, subjects completed three tasks. First, they listed all of their knowledge on three issues: abortion, capital punishment, and U.S. military involvement in Kuwait.⁴ Then, subjects indicated whether each piece of knowledge agreed with, disagreed with, or was neutral with respect to their own attitude positions. Finally, subjects reported the personal importance of their attitudes.

We used data from the knowledge-listing and rating tasks to compute measures of agreement-based organization. Specifically, we computed adjusted ratios of clustering, or ARC scores (see, e.g., McGraw and Steenbergen in this volume; Ostrom, Pryor, and Simpson 1981). In general, this measure gauges the frequency with which pieces of information are immediately followed by other pieces of information that are the same on some specified dimension. In the current study, larger ARC scores indicate a greater tendency to follow pieces of agreeable knowledge with other pieces of agreeable knowledge, disagreeable knowledge with disagreeable knowledge, and neutral knowledge with neutral knowledge. Consequently, larger scores indicate more agreement-based knowledge organization.

A regression analysis collapsing across the three issues and controlling for individual and issue differences indicated that agreement-based organization was less central in the knowledge structures accompanying *more* important attitudes ($\beta = -.20, p < .05, N = 106$).⁵ This result suggests that knowledge relevant to unimportant attitudes is organized primarily in agreement-based structures, whereas knowledge relevant to important attitudes is organized in multidimensional structures, in which attitudinal agreement is less central. Thus, even among people whose attitudes on a political issue are unimportant, attitudinal agreement shapes reaction to and storage of attitude-relevant information, perhaps quite automatically and effortlessly. Perhaps only when individuals' attitudes are personally important do they think more extensively about relevant information, and come to see other types of relations between pieces of attitude-relevant knowledge.

Conclusion

In this chapter, we have described the results of four experiments that investigated the relation between attitude importance and knowledge organization. The results of these studies support two general conclusions. First,

knowledge relevant to important attitudes is apparently more elaborately organized in memory than knowledge relevant to unimportant attitudes. Second, attitudinal agreement seems to be a more central organizing dimension in stored knowledge relevant to unimportant attitudes.

These findings suggest a possible explanation for various previously observed effects of attitude importance. For example, a number of studies have shown that important attitudes are more resistant to change than unimportant attitudes (Ewing 1942; Fine 1957; Klower 1936; Krosnick 1988a). Elaborate knowledge organization may provide individuals with the resources necessary for efficiently and effectively resisting the influence of attitude-challenging information. That is, organization around more dimensions may enable people to quickly locate information in memory needed to counterargue each new piece of challenging information, thus allowing them to resist any influence of this information, thus preserving the attitude.

Similarly, previous research has indicated that attitude importance is associated with better memory for attitude-relevant information (Berent 1990). A multidimensional organization of knowledge may provide individuals with a better cognitive framework for incorporating relevant information, which should make it easier to store, locate, and retrieve relevant information from memory. Consequently, information relevant to important attitudes may be better remembered than information relevant to unimportant attitudes, because of the efficient method of storage and retrieval afforded by the multidimensional organizations characteristic of important attitudes.

This reasoning has useful implications regarding evaluations of political candidates. During political campaigns, voters are exposed to information about where candidates stand on a variety of political issues. Voters presumably attend to such information and use it to form candidate preferences. However, the similarity between candidates' and voters' attitudes on political issues has more impact on candidate preferences when attitudes are important than when they are unimportant (Krosnick 1988b). This may occur because important attitudes are accompanied by multidimensional organizations that better equip voters to understand, remember, and use information about candidates' positions on those issues. This organizational structure may thereby be partly responsible for the greater accuracy in candidate perceptions associated with attitude importance (Krosnick 1991).

Before concluding that multidimensional organization plays the above mediating roles, a few caveats should be mentioned. First, the research described here has only documented a relation between importance and organization. Although the idea that importance causes organization fits in nicely with a large body of existing research (see, e.g., Bominger, Berent, Krosnick, and Fabrigar, n.d.), it is also possible that organization causes

importance, or that some third factor causes both importance and organization. It is also possible that our subjects inferred the importance of their attitudes, based upon their performance on the organization-assessment tasks we administered to them. In order to fully understand the relation between importance and organization, future research should, therefore, explore the causal influence of importance on organization, and the causal influence of organization on these effects. This can be accomplished either through experimental manipulation of importance and organization, or by statistically disentangling the causes and effects, through multivariate analysis. Until the causal relation between importance and organization is more fully investigated, definitive statements about the mediating role of organization must remain tentative.

Second, our reliance on correlational analyses in these initial investigations does not enable us to rule out other factors that may influence either organization or the relation between importance and organization. A variety of factors could play such roles, including expertise (see, e.g., McGraw and Pinney 1990), prior thought (see, e.g., Linville 1982; Millar and Tesser 1986), and direct experience (see, e.g., Fazio and Zanna 1981). Because expertise is uncorrelated with attitude importance (Judd and Krosnick 1989), it seems unlikely to be able to account for the relation we observed. Consistent with this expectation, some of our studies controlled for all global individual differences, and observed the same importance-organization relation within individuals across attitudes. Therefore, we expect that this relation is due to specific attributes of important attitudes, not to artifactually confounded global individual differences.

Finally, because knowledge structures are not physical structures that are directly observable, the way in which knowledge is organized can only be inferred using indirect indicators. Furthermore, such measures of knowledge organization may be influenced to some degree by factors other than organization. For example, a measure of organization that relies on a person's knowledge listing may reflect that person's motivation to list knowledge and memory search strategies, as well as the way in which knowledge is organized. Whereas no method generates a pure measure of organization, the use of multiple methods that all reflect some degree of organization allow us to triangulate to the real relation. The fact that several disparate methodologies all suggest a relation between importance and organization, therefore, heightens our confidence that such a relation does exist.

It is useful to note that the work presented in this chapter addresses a growing concern among political scientists: that cognitive psychological constructs have done little to advance understanding of political behavior (see, e.g., Kuklinski, Lusk, and Bolland 1991; for an alternative view see Lodge, McGraw, Conover, Feldman, and Miller 1991). Previous investiga-

tions of political cognitive organization have rarely measured the features that define these organizations, such as constituent cognitions and the connections among them. This has led some critics to charge that little, if anything, new has been gained by the importing of concepts such as schemas (Kuklinski, Lusk, and Bolland 1991). Coupled with the work of Lusk and Judd (1988), McGraw and Steenbergen (in this volume), and others, the research presented in this chapter demonstrates how investigations of political knowledge can, indeed, benefit from direct measurement of cognitive organization. We look forward to future research adopting similar approaches to the study of political information processing.

NOTES

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1. The regression analysis employed here was somewhat different than the analysis employed in the first study. Although subjects completed attitude-importance questions for all issues, they completed the knowledge listing and pairing tasks for only one political issue. Thus, they generated a measure of knowledge organization for only that issue. Consequently, dummy variables representing subjects would be completely redundant with dummy variables representing issues. In order to control for individual differences in this study, subjects' average importance rating across all three issues was entered into the regression equation. In addition, the importance of the target issue was entered as a predictor as well. The coefficient reported for this latter effect therefore represents the association between attitude importance for the target issue and organization for that issue, controlling for individual differences in average attitude importance and issue differences in average organization across all issues.

2. Our measure of the number of dimensions is conceptually similar to Scott's *H* measure, used by both Linville (1982) and Millar and Tesser (1986).

3. The measure of organization was simultaneously regressed on attitude importance, a dummy code representing issue, and subjects' average importance rating, as in our second study.

4. Data for this study were collected during the early part of 1991, during the period in which the United States was militarily involved in the conflict.

5. The measure of knowledge organization was simultaneously regressed on attitude importance and dummy codes representing individuals and issues, as in our first study.

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