

Structure and Change of Complex Political Attitudes

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The proposition that attitudes are interconnected in a larger belief structure is neither original nor controversial (Scott, 1966). Most political and social psychologists acknowledge the intuitive appeal of the idea that attitudes do not exist in isolation. Indeed, when conceptualizing attitudes, it is hard to imagine them as isolated from all other attitudes in the individual's belief system. This integrated view of attitudes comports with current conceptions, whether considering attitudes from the traditional point of view, as enduring and stable structures stored in memory and varying in strength (Petty & Briñol, 2009), or from the constructionist position, which holds that attitudes are not stored in memory but rather are evaluations constructed on the spot, and influenced by the context in which they are assessed (Schwarz, 2007). In developing a structural conception of interconnected attitudes, it is reasonable to assume that some attitudes are more central or self-relevant than others, and while they may be difficult to change, these central beliefs are linked with others that may be of lesser self-relevance, and all are associated more or less strongly with each other.

The assumption that attitudes are interconnected has a long history in political science (Converse, 1964), has been verified in empirical research, and is heuristically plausible. For example, it is easy to predict that a strongly antagonistic evaluation of Barack Obama also would likely be associated with a negative attitude toward his Affordable Care Act, his Middle East strategy, and his handling of the Wall Street bailout. Although this prediction is easy to make, its social psychological underpinnings are not immediately obvious. Explaining why these expected outcomes transpired depends in large part upon one's implicit theories regarding the ways in which attitude objects are associated in cognitive space. The attitudes in question may be linked because they fall along a general conservative-progressive political spectrum, or because they had been claimed (and thus associated) by proponents and opponents of the President's

administration as the seminal actions of his presidency, and social identity processes require adhering to one's group's prototypical beliefs. Alternately, the association may be seen as the result of a generalized halo effect, in which the evaluation of Obama affects the evaluations of all his actions. This latter possibility may be the result of any of a number of heuristic processes, in which cognitive laziness (Shah & Oppenheimer, 2008), need for closure (Kruglanski, 1996), or need for cognition (Cacioppo & Petty, 1982), among others, attenuate cognitive differentiation among substantive issues linked to a common origin (in this instance, Barack Obama).

Although the theoretical statement that attitudes appear naturally linked in coherent cognitive structures based on mental associations appears eminently reasonable, research practice in social psychology suggests otherwise. The bulk of research on attitude structure and change in social psychology is characterized by the study of beliefs in a "one-attitude-at-a-time" fashion, where spread of effect from a targeted belief to other related cognitions is rarely studied. Indeed, although there are exceptions to this observation (e.g., Alvaro & Crano, 1997; Judd, Drake, Downing, & Krosnick, 1991; Lavine, Thomsen, & Gonzales, 1997), most attitude change investigations are concerned with an intervention's effect upon individual beliefs. This common practice represents one of social psychology's most regrettable missed opportunities. Had our studies normally included assays of close or distant attitudes' associations with the focal belief, our understanding of the cognitive dynamics of attitude change may have been advanced considerably. For instance, research on the influence of minorities on majority beliefs has pointed to the effects of attitude change processes on beliefs that are associated closely or distally with the focal attitude object, and often that are not even mentioned in the minority's persuasive communications (Alvaro & Crano, 1997; Crano, 2012; Crano & Alvaro, 2013; Gordijn, Dr Vries, & De Dreu, 2002; Martin & Hewstone, 2008). Importantly, these studies also

have assessed the effects of “incidental” belief changes on the focal attitude, the target of the persuasive attack. These analyses have shown that if the indirect attitude change is sufficient, later consonant changes in the focal belief may occur (Crano & Chen, 1998).

This is not meant to diminish the one-attitude-at-a-time research model; obviously, it was a necessary step in developing an understanding of important features of beliefs and subsequent behaviors. However, it seems fair at this point in social psychology’s advance to propose that our understanding of attitudes and attitude change that has emerged from this general research orientation is, for lack of a better term, and at best, incomplete. Attitude change research at this juncture is ready to move to the next peak (McGuire, 1985), which involves consideration, explication, and understanding the mutual interdependence of attitudes within structured systems of interconnected beliefs (Prislin & Crano, 2008).

In moving to this new peak, we are guided by heretofore underappreciated research in related fields. Some of the best assessments of multifarious attitude structure and change are available in the work of political psychologists and political scientists. While the goals of their research endeavors sometimes differ from ours (e.g., experimental social psychologists rarely engage in electoral polling), research in political psychology has demonstrated a clear realization that multiple attitudes, and ideally, multiple methods, must be examined to maximize prediction of responses to policy issues of greater or lesser self-relevance (Kinder, 2011).

In this chapter, we examine the utility of an approach that considers attitudes from a belief systems perspective, an approach that is more integrated and structurally holistic than the usual single outcome variable model. In doing so, an event that affected almost all who witnessed it (Woods, 2011), the coordinated terrorist attacks on the United States on September 11, 2001 (hereafter, 9-11), is the focal point of our analysis. In addition to the obvious pain and

suffering brought on by this event, we are concerned primarily with how Americans' attitudes organized and changed within structures of political beliefs related to this event. For present purposes, 9-11 is critical because it may have affected the interconnections among attitudes resident in a belief structure related to terrorism, including attitudes toward foreign aid, the military, and national defense. This analysis proceeds from the assumption that is readily accepted by most, as we have observed, of the interconnectedness of attitudes of varying centrality or degrees of vested interest (Crano, 1995) within the belief systems of individual actors.

Pervasive Attitude Change

The consistency of the attitudes and actions of people for whom a belief is highly self-relevant has been shown to be considerably stronger than those for whom the attitude is less relevant (Crano, 1997; Dominicis et al., in press; Sivacek & Crano, 1982; Thornton & Tizard, 2010), and recent research has shown that even indirectly vested outcomes – those that affect close others, but not the attitude holder directly – also affect attitude-behavior consistency (Johnson, Siegel, & Crano, in press). Research on policy-relevant attitudes indicates that those experiencing large scale personal or social upheaval significantly adjust their beliefs in ways that accommodate these changes. Those who have recently lost their jobs, for example, report significant shifts in attitudes toward economic policies involving increased government support for jobs (Mach & Jackson, 2006), and Lehman and Crano (2002) showed that these attitudes were more likely to be associated with congruous actions to the extent that the individual was invested (in this case, had been made redundant) in the issue. The effect of major social changes on attitudes is consistent and coherent across other self-relevant events as well. Ethnic tensions, for example, affect majority group attitudes toward immigrants and immigration (Espenshade &

Clalhoun, 1993; Esses, Jackson, & Armstrong, 1998; Schneider, 2008), and imposing property taxes affects attitudes toward foreign aid expenditures (Hatemi, 2013). The list could be extended, but the evidence is clear that large-scale socio-political events may evoke attitude change on a broad level. It does not seem to matter whether the event is financial (e.g., the U.S. 2009 economic recession: Brooks & Manza, 2013), political (e.g., 9-11; Breugelmans, van de Vijver, & Schalk-Soekar, 2009), or social (e.g., immigration; Meuleman, Davidov, & Billiet, 2009). A momentous event will influence many apparently diverse attitudes that are related to the event, and these changed attitudes will affect behavior to the extent that the beliefs affect the individual's self-perceived well-being.

Examining American responses to the War on Terror, Bennett, Flickinger, and Rhine (2005) found that across the nation, widespread attitude change toward foreign affairs followed 9-11. The change indicated that Americans had become less positively disposed to prioritizing foreign policy in political affairs. Consistent with Almond's (1960) assessment comparing Americans' foreign policy attitudes following World War II, Bennett and colleagues (2005) proposed that changes in foreign policy attitudes were due to a relative absence of knowledge and attention paid to current international affairs by the electorate. Converse (1964) apparently shared this opinion, as he observed that the American electorate consisted largely of individuals who were "innocent of ideology, ill prepared, and perhaps even incapable of following (much less actually participating in) discussions about the direction government should take" (Kinder (2003, p. 13). As knowledge and vested interest play important roles in determining attitude strength (Crano, 1983, 1995; Fabrigar et al., 2006; Glasman & Albarracin, 2006), lack of knowledge suggests weaker attitudes that are readily susceptible to change and have little directive impact on subsequent behavior. Widespread attitude change might, therefore, be an

expected reaction among those holding weak or non-vested beliefs.

Of course, strongly vested attitudes also can change in response to major political upheaval, and these more central attitudes, if changed, may have considerably more effect on the complex of interrelated attitudes that constitute the belief system. In a three-wave longitudinal study, Meyer, Rizzo, and Ali (2007) found that Kuwaiti citizens became progressively more favorable toward democratization after the Gulf War in 1991, and over time expressed an increasing affinity for the Gulf Coast countries; however, there was little movement on attitudes toward women's rights during this period, suggesting that Kuwaiti respondents did not perceive strong connections between women's rights and democratization.

Widespread attitude change not only occurs in response to long-term trauma and war. As was shown in the immediate reaction in the U.S. to 9-11, a single unexpected event of great impact also can affect belief systems, but the event must be self-relevant. Commonly studied single-event disruptions include terrorist attacks in New York (2001) and Madrid (2004). Assessing the impact of five terrorist attacks across 6 years, Breugelmans and colleagues (2009) examined Dutch citizens' attitudes toward multiculturalism and immigration after these social disturbances had occurred. The acts of terror involved attacks on New York in 2001, Madrid in 2004, and London in 2005. Closer to the respondents' homes, the researchers also assessed effects of the assassinations of the populist Dutch politician Pim Fortuyn in 2002 and the anti-establishment writer and director Theo Van Gogh in 2004.

The three wide-scale terrorist attacks that Breugelmans et al. studied occurred outside the Netherlands, and thus, it may be expected that they would not have powerful effects on strongly ingrained Dutch attitudes toward multiculturalism and immigration. However, the unexpected assassinations of two influential Dutch citizens in the Netherlands (Fortuyn's was said to be the

first assassination of a political leader in the Netherlands since 1672) resulted in a significant change toward less favorable attitudes on immigration and multiculturalism. This effect was neither pervasive nor persistent – attitudes returned to previous positions by 2006, and probably did not generalize to related attitudes, possibly because multiculturalism is a strongly held value for Dutch citizens.

A somewhat different pattern was found in the attitude dynamics of British citizens in the wake of the London public transport bombings in 2005. Survey research by Bozzoli and Müller (2011) indicated a strong change in attitudes of the populace, including a greater openness to enhanced security at the expense of civil rights: the “willingness to trade off security for liberties is dramatically affected by changes in individual risk assessments due to a terrorist attack” (p. S89). These changes appeared to persist for at least eight months after the attacks, when the study was completed. Perhaps the indiscriminate nature of the London bombings (vs. the targeted assassinations of specific Dutch public figures) was responsible for the more general and persistent change in British public opinion that grew out of the terrorist attack. In addition, the troubled ongoing relations between established citizens of Britain and newly arrived (largely Muslim) immigrants from Asia also may have played a role in the continuing unease. Interestingly, a poll of British public opinion taken four months after the London bombings of 2005 indicated a majority of the populace favored multiculturalism (http://fra.europa.eu/sites/default/files/fra_uploads/197-London-Bomb-attacks-EN.pdf), but a similar poll taken three years later found a precipitous drop in this number: only 30% of the UK populace in 2008 favored multiculturalism (<http://www.ipsos-mori.com/assets/pdfs/Multiculturalism-Briefing.pdf>).

A prime example of large-scale attitudinal response to a major public event is found in

the responses of United States' citizens to the terrorist attacks on September 11, 2001.

According to Pyszczynski, Solomon, and Greenberg (2003), the event had an enormous impact on the American psyche, the salience of mortality affecting many responses over a long period. Comer and Kendall (2007) found the attack had widespread, nonspecific, cumulative, and enduring psychological effects on American youth, consistent with Woods' (2011) research, which grouped reactions to 9-11 into three general response categories. These responses involve rally effects, prosocial behaviors, and authoritarian tendencies. A rally effect refers to behavior that involves uniting around common core values (e.g., "the flag"), and often, heightened displays of patriotism. This response was seen after 9-11 in attitude change in support of a formerly disliked and beleaguered president, whose popularity ratings post-attack reached the highest of all presidents over the prior thirty years. The groundswell of popularity that cut across party lines was extraordinary, but it did not persist (<http://www.gallup.com/poll/116500/Presidential-Approval-Ratings-George-Bush.aspx>). Trust in government also increased, as shown in more favorable attitudes toward Congress and the military (Smith, Rasinski, & Toce, 2001) and greater willingness to support military action (Woods, 2011). In the community, people showed increased social trust and more favorable attitudes toward civic engagement. Enhanced support and volunteerism, however, was not long-lived, and may have been more a function of vocalization than actual behavior (Schmierbach, Boyle, & McLeod, 2005). Authoritarian tendencies also increased, as did a general conservative shift in attitudes, with Americans showing more favorable attitudes toward war, the military, and penal code violence (Carnagey & Anderson, 2007; Huddy & Feldman, 2011; Nail & McGregor, 2009). Probably in response to continuing uncertainty over immigration and its assumed link to terrorist acts, widespread and general attitude change also was evident in Europe. From 2002-

2007, attitudes toward immigration became notably more negative in 17 European countries (Meuleman, et al., 2009). This shift was stronger in countries with growing minority populations, and more favorable attitudes occurred when the economic situation improved and unemployment abated. The recession in the United States from 2007-2009 showed similar pervasive changes (Brooks & Manza, 2013). During this period, Americans became less favorable toward government support of those in need, a selfish orientation opposite to that evidenced during the Great Depression. This movement probably was due in part to the extreme partisan political divide.

In summary, widespread or pervasive attitude change in response to major societal disruptions appears reliable, robust, and predictable. It can occur in response to a sudden and unexpected event (e.g., the attacks of 9-11), or changes can develop gradually as a result of slowly evolving conditions, and they can occur as a function of negative (Breugelmans, et al., 2009) or positive social disruptions (Zuba, 2009). Unanswered questions concern the implications of these changes for alterations across other components of people's belief systems. To gain traction on this issue, we turn to research in social and political psychology.

Organization of Political Attitudes

In his seminal contribution to political psychology and political science, Converse (1964) pointed to the necessity to investigate the organization of (political) attitudes if we were to make sense of policy-relevant beliefs, and the association of these beliefs with subsequent behavior. His ideological constraint theory posited that political attitudes were schematically organized within higher order mental categories along a liberal to conservative dimension. At this most basic, unidimensional level, favorable attitudes toward healthcare and birth control, for example, would fall at the liberal end of the continuum, and hence would share common variance, while

favorable attitudes toward national defense and decreased government support for the poor would be linked as well, but would fall at the opposite, conservative end of the dimension. Belief systems were defined as “configuration(s) of ideas and attitudes in which the elements are bound together by some form of constraint or functional interdependence” (Converse, 1964, p. 207). When new information was encountered, attitudes would readjust through a process of self-organization into superordinate, abstract categories. Converse defined constraint as “the success we would have in predicting, given initial knowledge that an individual holds a specified attitude, that he holds certain further ideas and attitudes” (p. 207). Constraint (or association) is necessary to maintain consistency of beliefs within the system, a recurring theme in social psychological from the heyday of cognitive consistency theorizing (Abelson & et al., 1968) to today (Gawronski & Strack, 2012).¹

Despite the elegance of his conceptualization, Converse (1964) found little internal consistency among the political beliefs of his respondents, little evidence of ideological constraint, and even failed to find within-respondent stability of the same attitude over time. The fundamental necessity of replicability of beliefs or belief measures did not appear to be met in Converse’s work (Crano, Brewer, & Lac, 2014; but see Kinder, 2003).

Reacting to Converse’s work, Judd and Milburn (1980) examined variations in political attitudes and found that members of the general public, without consideration of education, exhibited considerable ideological consistency and temporal stability of attitudes (Judd &

¹ This conceptualization of attitude structure is congruent with Hovland, Janis, and Kelley’s (1953) earlier theoretical discussion of individual attitudes, which were viewed as a superordinate categorization of opinions, and with more recent research concerned with the “architecture of interattitudinal structures” (Dinauer & Fink, 2005, p. 1).

Downing, 1990, 1995; Judd & Krosnick, 1989; but see Converse, 1980). They did not agree that owing to the greater frequency of thought and deeper level of abstraction, political experts held more cognitively complex belief structures, and hence exhibited greater consistency on political issues. Adding to the mix, Nie, Verba, and Petrocik (1979) found evidence consistent with Judd and colleagues, indicating that members of the general public did in fact organize political attitudes into meaningful categories, consistent with earlier studies (Bishop, Hamilton, & McConahay, 1980; Luttbeg, 1968). Regardless of the winner of the debate over the normality of hierarchical ideological constraint and consistency across the populations and time, the standard assumption among many favoring the notion of ideological constraint was that there existed a unidimensional ideological system in which beliefs were ordered along the liberalism-conservatism dimension.

Multidimensional models of political attitudes

Other models of interattitudinal belief structure suggested that the liberal-conservative dimensional model was overly simplistic, and instead posited multidimensional models of belief systems to explain consistency among ostensibly related attitudes. Button and colleagues (Button, Grant, Hannah, & Ross, 1993; Grant, Hannah, Ross, & Button, 1995), for example, showed in experimental research that participants used more than simple unidimensional rules in attitude categorization tasks, thus suggesting a more nuanced conceptualization of the attitude landscape. Their further explorations suggested that respondents were capable of complex categorization processes when motivated, for example, by self-presentation concerns (Grant, Button, Hannah, & Ross, 2003). For example, Button et al. (1993) found that two dimensions (Traditional-Radical and Liberal-Conservative) organized the structure of political attitudes across a set of diverse social issues. Targets with attitudes that consistently fell into one of the

four quadrants formed by the combination of the two dimensions (e.g., liberal and radical) were processed at a faster speed. Participants evaluating others with attitudes that were inconsistent with empirically predetermined dimensions required more time to assimilate the information, and also downgraded the individual who presumably held the inconsistent beliefs.

Support for a more complex political attitude structure also arose from a cluster analysis conducted by Fleishman (1986). Data from the 1980 ANES (American National Election Study) indicated that instead of two, six categories were needed to structure the data adequately. With respect to government economic programs, consistency was found within groups defined as liberal, quasi-liberal, conservative, limited government believers, pro-labor advocates, and middle of the roaders. He posited that these clusters could also be organized according to economic, social, and racial dimensions, thereby suggesting that a unidimensional model was overly simplistic.

Some research suggests further complexity in deciphering American political beliefs; the citizenry appears to be moving away from a three-tier categorization (economic, social, racial) because the past decade has seen the emergence of partisan divide on issues across all three of these categories. Layman and Carsey (2002) have argued that people rely more on party identification to structure attitudes because multiple, orthogonal issues are addressed simultaneously, a process called “conflict extension.” The overlap in conflicting policies is proposed to lead to more polarization by political party and a consequent return to unidimensional attitude structures.

The organization of attitudes onto one or multiple dimensions has important implications for understanding the process of attitude change in natural settings. If attitudes are strongly associated within belief systems, then changes in one attitude can be expected to lead to changes

in related attitudes (i.e., in attitudes resident within the same structure). Thus, attitude change on a policy along, say, the liberal-conservative dimension may affect all the other attitudes for which that dimension is relevant. Although the exploration of linked-attitudes and system-wide attitude change has received some attention in the literature, it has been “sporadic and limited in scope” (Buttton, et al., 1993). This chapter details another method to investigate the nature of interattitudinal relations within belief structures.

The Attitude Network

Using the Gestalt framework as a guide, an attitude network is defined as a mental structure of attitude nodes, each relating to a single attitude object. These nodes are connected by structural links to similar nodes, with related nodes more proximal. The structure is determined by the relative connections and strength between attitude nodes (Judd et al., 1991). This conceptualization of attitude structure denotes the spreading of activation, which reflects the possibility that attitudes (nodes) do not exist in isolation, but can influence closely related attitudes (Anderson, 1983). Four theories have used Gestalt principles to understand attitudes, and each focuses on a different aspect of the attitude network.

McGuire and McGuire’s (1991, 1996, 2001) theory of thought systems assumes that people characteristically develop networks or systems of thoughts to cope with quotidian events. An event is considered any attitude object tied to a belief. Two assumptions guide this theory: the connectionist assumption, in which attitudes are connected in a system that is self-organized, and the salience assumption, in which information varies in momentary availability and accessibility (similar to Converse’s idea of centrality). According to this theory, an attitude network is comprised of attitude objects that are systematically activated, and can be predicted by their dimensions and accessibility (McGuire & McGuire, 1991).

In his *Architecture of cognition*, Anderson (1983, p. 126) described a belief system prosaically as “A network (that) can be thought of as a tangle of marbles connected by strings. The marbles represent the nodes, the strings the links between nodes.” Anderson’s model describes how stimulation of one node may reverberate through the network. Using priming and fact retrieval to understand this process, he proposed that the distance between nodes determined activation patterns: change of one attitude node may have a direct influence on proximal nodes.

Monroe and Read’s (2008) *attitudes as constraint satisfaction* model (ACS) helps explain how attitudes are held in networks and the role of activation. The model assumes that attitudes are represented as a web of cognitions, and that activation is spread through the system by associative processing. Activation of a single node will spread to all linked nodes until the constraints are relaxed, or the system is at balance (Read, Vanman, & Miller, 1997).

Woelfel and Fink’s (1980) communication framework also relies on a structural belief conceptualization. It is concerned with the role of attitude change in a network. Their model focuses particularly on the differences in attitudinal space caused by a counterattitudinal or persuasive message. Attitudes are linked in a multidimensional space and these connections can induce indirect change in attitudes when a message is directed at a related, focal attitude.

Changes in paired attitudes

An entrée into the complicated world of belief systems may be facilitated by research that considers paired attitude change, or modifications of attitudes that are associated with ostensive target of an attitude change message. Judd and colleagues (1991) used priming to explore the dynamics of linked attitudes and subsequent attitude polarization. They showed that evaluative responses toward a given attitude object were made more quickly if respondents had earlier evaluated an object that was linked to it. Furthermore, consistent with Tesser and Conlee’s

(1975) model of attitude polarization, evaluation of an attitude was more extreme after extended thought, and so too were attitudes linked to the targeted attitude (handgun control and capital punishment were the issues studied).

Lavine and colleagues' shared-consequences model also supports the proposition that attitudes resident within the same belief system will conform to consistency pressures (Lavine, Borgida, & Sullivan, 2000; Lavine, et al., 1997). The model postulates that the pressure for linked attitudes to remain consistent is a function of the strength of the interattitudinal relationship. Using political attitudes to demonstrate this phenomenon, Lavine and colleagues (1997, p. 735) addressed the expert-novice ideological consistency controversy (Converse, 1964), and found that "induced thought... heightened the extent to which pairs of policies were viewed as instrumentally influencing the attainment of a common set of values, which in turn influenced the structural balance of participants' attitudes."

Research on the leniency contract model (Crano & Alvaro, 2013), which is concerned with the manner in which minorities effect attitude change (Alvaro & Crano, 1997; Crano & Alvaro, 1998; Crano & Chen, 1998), has supplied empirical evidence consistent with the belief systems orientation, and specifically with a spreading activation interpretation, which Judd and colleagues (1991) had supported. The leniency model proposes that counterattitudinal messages from minority in-group members are effective because they will not be dismissed by the majority, nor will the minority be derogated owing to its in-group status. Consistent with this expectation, Alvaro and Crano (1997) showed that an in-group minority-sourced persuasive message directed toward one attitude object affected a linked attitude in a manner consistent with the thrust of the persuasive message. Confirming expectations, results showed that the in-group minority's persuasion communications were not strongly counterargued, and the minority was

evaluated more positively by the majority *after* it had delivered a communication inconsistent with the established beliefs of the majority group. The leniency model's belief systems orientation also holds that change in an (indirect) linked attitude leads to a tension in the attitude network, and if this change is sufficient, the focal attitude (the belief targeted originally) will change as well, after some delay. Crano and Chen's (1998) research supported this expectation.

All of these models and empirical demonstrations, and many others like it, attest to the importance of gaining a deeper understanding of belief systems, and interattitudinal consistency. The research to this point has provided strong evidence that attitudes are not held in cognitive isolation. Interdependency among attitudes is clearly inferable from the results of many studies, and the research reviewed here indicates that factors that affect one attitude are likely to affect its twin. This surety leads to the next question, which is, do the same dynamic relations hold across multi-attitude structures whose constituents vary in degree of interdependence?

Extending the focus beyond paired attitude objects

This question is difficult to answer, because theories of attitudinal consistency that have addressed the issue of paired attitudes have received some attention, but empirical literature explicitly testing the attitude network framework is at best insufficient. This probably is the result of the lack of a clear analytic strategy to deal with dynamic system-wide changes, which only now is beginning to gain traction in social psychology, thanks largely to the work of Vallacher and colleagues (Vallacher et al., 2014; Vallacher, Read, & Nowak, 2002). Variations on the standard methodological approaches and statistical models have been used in research on belief systems, including simple fiat (these variables deserve to be related) to simple correlations, multiple regression, factor analysis, analysis of variance, structural equation models, and cluster analysis. All of them are intuitively appealing, but have problematic features as well. Our

approach adopts an orientation inspired by earlier work (Messick, 1956; Nelson, 1974; Wish, Deutsch, & Biener, 1970) that sought to uncover the dimensions respondents used to characterize social attitudes or nations using multidimensional scaling analysis (MDS: Kruskal, 1964; Shepard, 1962a, 1962b). In the present work, we turn to the years directly preceding and following 9-11 to examine the linkages among a group of attitude objects that intuitively should, or should not be associated with attitudes toward the attack. Our strategy in developing this analysis is to describe a potentially useful way of considering the interconnections among a set of attitude objects, and to investigate linked changes in these elements that came about as a result of a major social disruption. We judged that some of these attitude objects would have been affected by 9-11, and others would not; we expected differences in structural modifications as a result of their relevance to 9-11.

Data were collected as part of the General Social Survey (GSS), a longitudinal cross-sectional biennial study whose respondents were representative of US eligible voters. In 2000 and 2002, years bracketing 9-11, complete data for our research were available from nearly 3000 respondents. In each year, correlations were calculated between issues we considered highly relevant (national defense, the military, Congress, the executive branch, and foreign aid) and considerably less relevant to the events of 9-11 (education, drugs, crime, health, and the environment). The matrix of correlations of all 10 attitudes were entered (as similarities) into an MDS analysis, which yielded a two dimensional solution of low stress (good fit). Then, the interpoint distances among relevant and less relevant attitudes were plotted for both years.

The results of this analysis for attitude objects considered, a priori, as highly relevant to the 9-11 attack are presented in Figure 1. Two features of this analysis merit close attention: analysis revealed that two dimensions summarized the obtained data. The first of these, which

runs along the abscissa, appears to identify a *social benefits vs. individual benefits* dimension. Dimension 2, on the ordinate, appears to represent a *progressive to conservative* dimension, consistent with considerable earlier theorizing and empirical research in political psychology (Grant, Hannah, Ross, & Button, 1995; Judd & Downing, 1990). In addition to the efficient two-dimensional solution, the changes from 2000 to 2002 are noteworthy. As shown, attitudes toward the Congress remained relatively consistent across the critical years. However, attitudes toward the remaining four relevant attitude objects changed in interesting and potentially informative ways. The largest change is evident in attitudes regarding the Executive Branch of the government. As illustrated, these attitudes moved in a strongly conservative direction, and concurrently, individualistic rather than social benefits became more relevant. This same conservative change pattern also was evident in attitudes concerning the military. Personal or individualistic benefits of national defense also became more relevant than social benefits after 9-11. One result contrary to this general trend in the direction of self- over social benefits is found in foreign aid, which moved in a social-progressive direction. Considerably less movement across years is seen among attitudes considered a priori as less relevant to 9-11 issues. As shown in Figure 2, movement on these attitudes from 2000 to 2002 is hardly discernable.

<Insert Figures 1 & 2 about here>

These results are consistent with a belief systems orientation. The analysis disclosed a pattern that indicated related attitudes were inclined to change relative to each other after a momentous (relevant) social disruption, whereas unrelated attitudes remained unaffected. Attitudes and attitude-pairs did not return to the pre-9-11 level until approximately six years after the sharp attitude change associated with the events of the attacks.

These results were not a function of higher levels of variability in the 9-11 proximal

attitudes. Figures 3 and 4 illustrate the year to year change in attitudes from 1994 through 2010 in attitudes thought to be relevant or not relevant to the events of 9-11 (proximal vs. distal attitudes, respectively) or not relevant (distal attitudes). Figure 3, which involves the 9-11 proximal attitudes, shows considerable year to year variability, but in all instances save attitudes toward the Congress, positive attitude change ensued at the disruption between 2000 and 2002. This consistency was not seen in the distal attitudes, as illustrated in Figure 4.

<Insert Figures 3 & 4 about here>

Reprise

Research on belief systems has been an ongoing feature of research in political psychology, sociology, and related fields for many years. For many social scientists working in this area, a liberal-conservative dimension was sufficient to organize policy attitudes, whereas other researchers suggested that a more complex multi-dimensional structure characterized belief systems. Research on belief systems has made use of many common statistical models to characterize the manner in which beliefs are organized conceptually, including MDS approach, one version of which was used in the present research. The results of the analyses presented here suggest the utility of MDS, and reinforce the presumption, long held by most in this area, that attitudes exist within some cognitive-organizational structure, and thus are likely to shift in logically or psycho-logically consistent ways when one or another of the components of the system is perturbed. If the perturbation is sufficient, the change may have ramifications across the entirety of the relevant belief system. All of these conjectures and possibilities are consistent with the results reported here. We are hopeful that this research, and the models suggested in this chapter, will contribute to a renewed emphasis on belief systems in social psychology.

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Figure 1. Plot of interpoint distances between identical attitude measures collected in 2000 and 2002 for variables considered highly interrelated to attitudes relevant to the 9-11 terrorist attack. Arrows indicate movement in multidimensional space from 2000 to 2002. Note the differences in multidimensional space between paired attitudes across years.

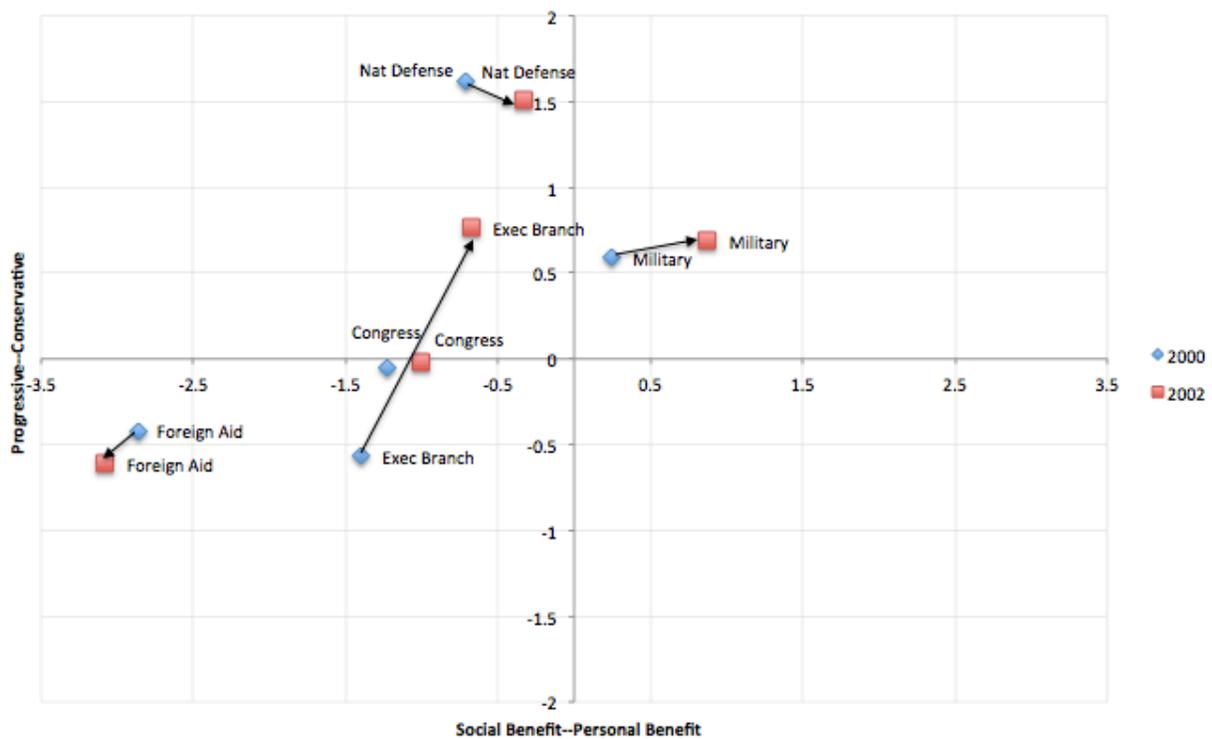


Figure 2. Plot of interpoint distances between identical attitude measures collected in 2000 and 2002 for variables considered unlikely to be related to attitudes relevant to the 9-11 terrorist attack. Arrows indicate movement in multidimensional space from 2000 to 2002. Note the proximity in multidimensional space between paired attitudes across years.

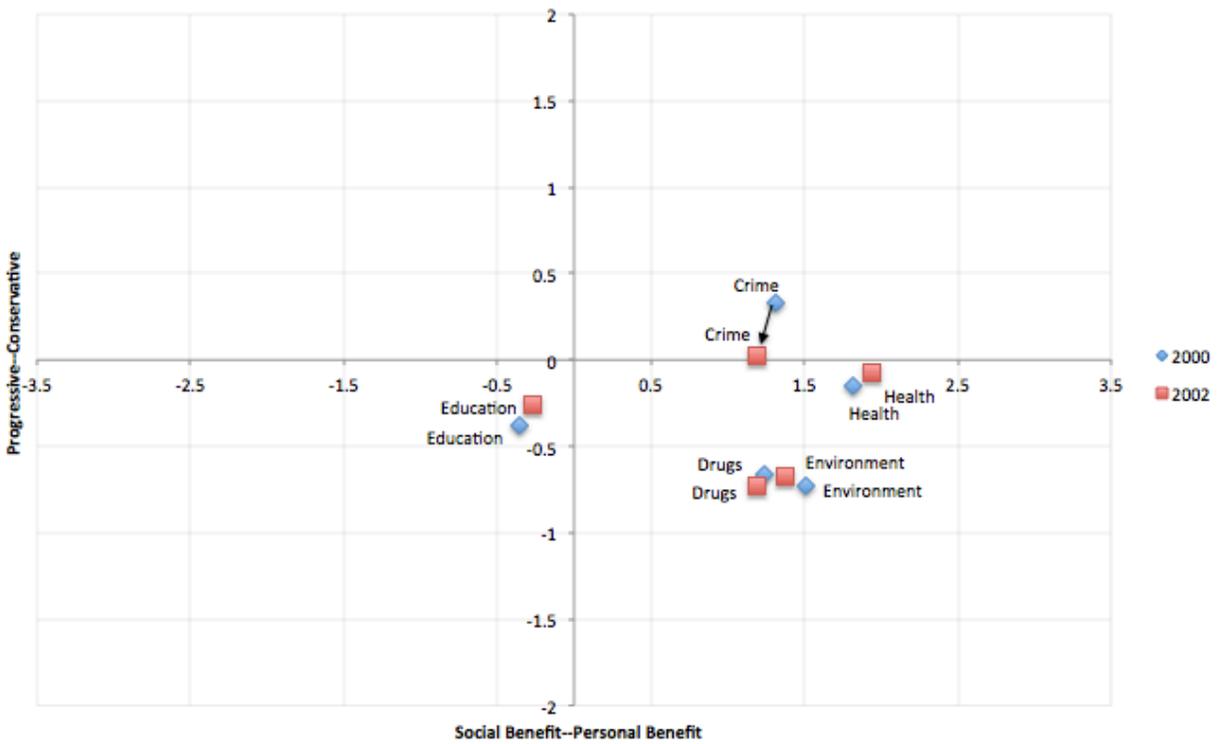


Figure 3. Change in mean attitude from one year to the next in mean attitudes judged a priori as relevant to the 9-11 terror attacks, 1994-2010.

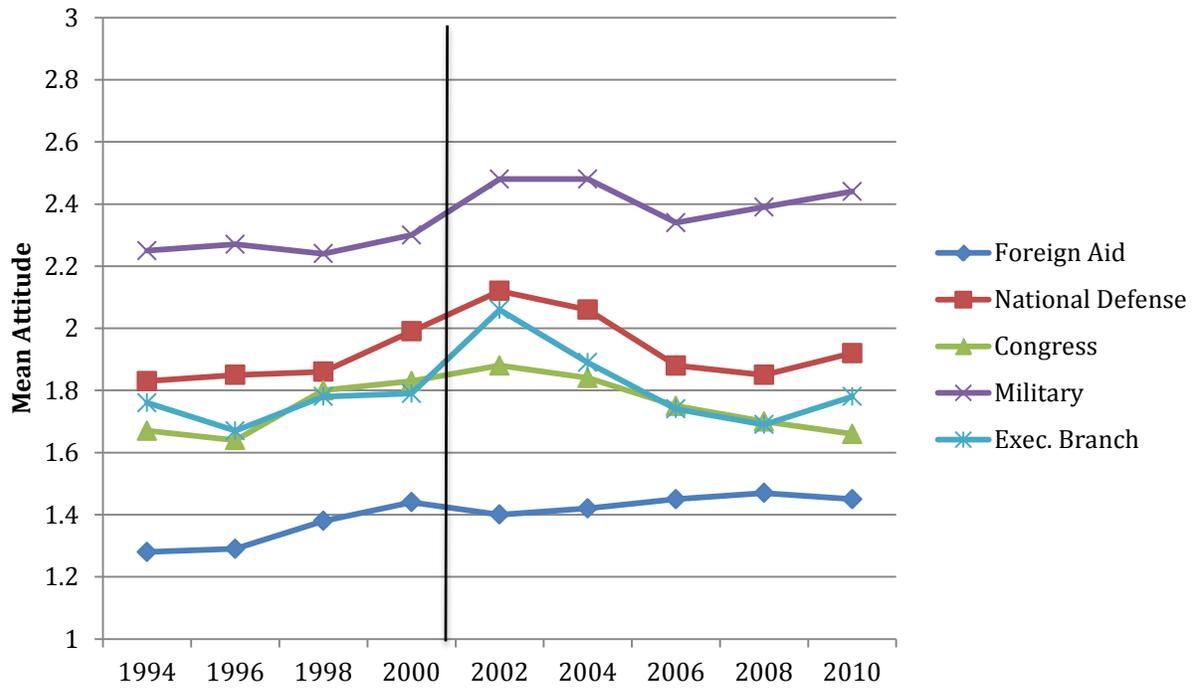


Figure 4. Change in mean attitude from one year to the next in mean attitudes judged a priori as irrelevant to the 9-11 terror attacks, 1994-2010.

