

Citizen Viewpoints on Energy Policy*

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ABSTRACT

This exploration of citizen viewpoints on energy policy uses a clustering technique to analyze 101 Q-sorts obtained from a diverse national sample in April 1979.

The results indicate an approximate consensus. The predominant themes in the core viewpoint and three peripheral variations are resistance to energy price increases and concern for public health, safety, and the environment, particularly in connection with nuclear power plants. There is also widespread distrust of the oil and gas industry, local utilities, the President, government generally, and energy experts, coupled with disbelief, distrust, disaffection, and undertones of moral outrage. The existence of this approximate consensus is less surprising than the absence of shared viewpoints that are independent or opposed to it. Individual interpretations of the main themes are explored through unstructured, follow-up interviews with the best representatives of the core viewpoint.

The evolution of shared viewpoints has been shaped by specific events such as Three Mile Island and by recurring events, particularly chronic energy price increases and intermittent shortages, and the ongoing national debate on energy policy. In our interpretation, the social tension and personal insecurities accumulated as a result of the energy situation are potentially destabilizing. However, the potential for rapid change in citizen viewpoints has so far been blocked by perceptual and political rigidities that underlie an approximate stalemate in Washington.

The concluding section presents some suggestions for dealing with the perceptual, political, and moral aspects of the situation.

I. Introduction

Our inability to realize satisfactory progress toward a sustainable energy future has been attributed to the energy policy process and, often indirectly, to our institutions of government, law and politics. From one perspective, the political system enables special interests and a recalcitrant public to frustrate the adoption of rational and comprehensive policies developed by experts in the federal government. From

* We would like to thank Gerald A. Cole for his contributions to the initial phases of this study, and The University of Michigan for financial support. An earlier version of this paper was presented at the 25th Annual Meeting of the American Nuclear Society, June 5, 1979, in Atlanta.

another, the political system enables the public and the federal government to inhibit the development of efficient market solutions. A closer look at citizen viewpoints on energy policy, and their role in the policy process, sheds some light on these diagnoses.

A citizen's viewpoint on a public issue such as energy policy is an evolving pattern among an indefinite number of attitudes and opinions. Direct or mediated experience may induce shifts in the direction or intensity of a few of these predispositions relative to others, and thereby create stresses toward adjustment elsewhere in the pattern. Each change in the overall pattern redefines the meanings of the particular attitudes and opinions included within it.

Which predispositions change significantly in terms of intensity, direction, or meaning depends upon many factors? At one extreme are the primitive needs of the personality left over from earliest childhood. At the other are events on a global scale, such as changes in the production and price of Middle Eastern crude oil. What results from the interplay of such factors is a citizen's viewpoint that is ultimately unique, but which is similar in some degree to the viewpoints of others.

The function of promotional politics is to intensify, coordinate, and redefine certain predispositions on a selective basis, in order to mobilize support. The extent to which promotional efforts succeed or fail, given competing efforts and unplanned events, is a matter of overriding importance for public policy, as the diagnoses sketched above suggest: Widespread public opposition may render the efforts of policy planners politically infeasible or (if adopted) ineffective.

Our purpose here is to explore citizen viewpoints and their interaction with elite perspectives in the energy policy process; and to suggest the need to rethink energy policy planning as a means of coping with subjective differences.

For this study, in April 1979 we asked 101 citizens nationwide to express their viewpoints on energy policy. Through a procedure known as Q-technique [1], each sorted a sample of 48 statements culled from public discourse on the issue and selected according to a theoretical framework [2]. In contrast to the more familiar sample surveys, this technique is relatively specialized to the identification of shared viewpoints, and to qualitative questions of intensity, direction, and meaning in each of them. We used cluster analysis [3], a form of numerical taxonomy, to analyze the data. In addition, we conducted follow-up, unstructured interviews with the best representatives of these viewpoints in June 1979.

The results reveal only one basic, shared viewpoint on energy policy among these respondents, although certain variations are distinguishable. As in any approximate consensus, individual interpretations of the main propositions differ in some ways. The predominant themes are resistance to energy price increases and concern for public health, safety, and the environment, particularly in connection with nuclear power plants. There is also widespread distrust of the oil and gas industry, local utilities, the President, and energy experts, coupled with disbelief, disorientation, disaffection, and undertones of moral outrage. The existence of this approximate consensus is less surprising than the absence of shared viewpoints that are independent or opposed to it.

The evolution of shared viewpoints on energy policy has been shaped by specific events such as the incident at Three Mile Island and by recurring events, particularly chronic energy price increases and intermittent shortages, and the ongoing national energy policy debate. In our interpretation, the social tension and personal insecurities accumulated as a result of the energy situation are potentially destabilizing. However, the potential for rapid change in citizen viewpoints has so far been blocked by perceptual and political rigidities that underlie an approximate stalemate in Washington. The concluding section presents some suggestions for dealing with the perceptual, political, and moral aspects of the situation.

II. Methods

For those readers unfamiliar with the methods used here, a digression is in order. Other readers are encouraged to proceed to the next section.

Q-techniques, as we have noted, are appropriate for discovering the number and content of shared viewpoints. A shared viewpoint is a pattern of many attitudes and opinions organized into a coherent whole by like-minded individuals. Through the University Survey Research Center we contacted a diverse (but not random) set of 101 respondents. Each respondent was asked to model his or her viewpoint on energy by sorting 48 statements, each typed on a separate card, according to relative intensity and direction (agreement or disagreement). More specifically, each respondent did a preliminary sorting of the statements by agreement, disagreement, or relative indifference. The few statements agreed with most intensely were then placed at the +5 extreme of a continuum; the few statements disagreed with most intensely were placed at the -5 extreme; and sorting continued in this manner, alternating from one side to the other, until all of the remaining statements were located with respect to each other. The result is a Q-sort, in which intensity and direction are given directly by the respondent. Meanings imputed to any particular statement by a respondent can be inferred from the overall pattern.

From the Q-sort provided by each respondent we formed the matrix of distances between each pair of respondents i and j . Distance was defined as $d_{i,j} = 1 - r_{i,j}$, where $r_{i,j}$ is the product-moment correlation between their Q-sorts with each statement weighted equally. The average linkage method was used to form clusters of respondents who share in some degree the same viewpoint. In this procedure, each respondent is initially construed as a single-member cluster. Then the two clusters (or respondents) separated by the smallest distance are joined to form a two-member cluster. In the next and all succeeding operations, the two clusters separated by the smallest average distances between all pairs of their members are joined. In the final operation, all respondents are joined in one cluster.

The non-random sampling procedure entailed sociodemographic quotas assigned to each of seventeen interviewers. It does not permit estimates of the *proportion* of the

national population that holds a particular opinion or viewpoint. Together with the clustering techniques, however, it is sufficiently sensitive to signal the *existence* of any shared viewpoint in the population represented by several or more of the respondents. Diversity rather than randomness is the most appropriate sampling objective for this purpose.

III. An Approximate Consensus

The organization of viewpoints is summarized in Fig. 1. Each point along the horizontal axis at the bottom of the figure represents one of the 101 respondents. Thus

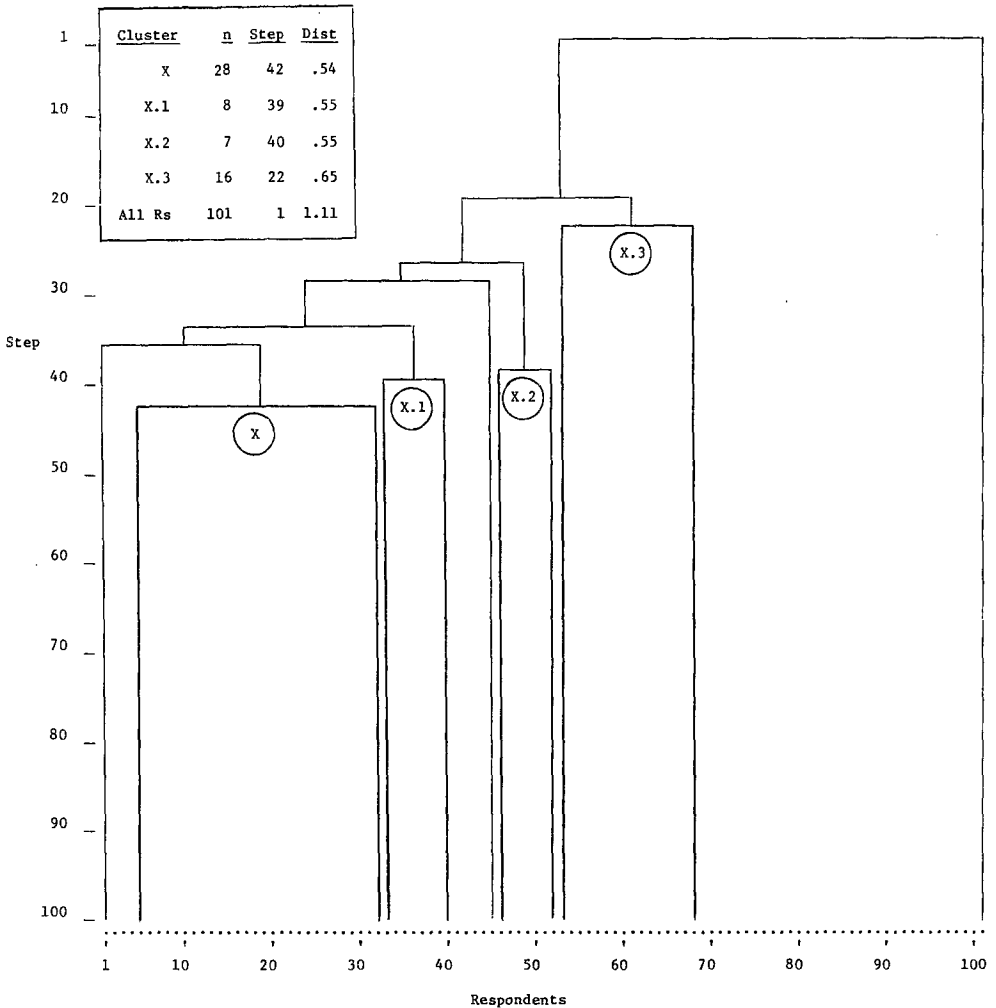


Fig. 1. Organization of viewpoints.

the width of a cluster reflects the number of respondents included within it. The vertical axis is scaled in steps, which indicate the point in the clustering procedure at which the various clusters formed. The steps are numbered from 100 to 1, bottom to top, in reverse of the sequence of operations. Through this convention, the step numbers indicate the number of clusters remaining at each point in the sequence. From the start of the procedure to the conclusion, the clusters become increasingly heterogeneous with respect to the viewpoints of the respondents included within them. The table in Fig. 1 gives the average distances between all pairs of members of the two clusters joined to form X, X.1, X.2, X.3, and the final cluster, along with the step at which the component clusters joined and cluster size.

Figure 1 indicates that there exists only one basic, shared viewpoint among these respondents with respect to the 48 statements. The respondents in cluster X are the core representatives of this viewpoint. The respondents in the other distinguishable clusters – X.1, X.2, and X.3 – share related but peripheral viewpoints. The viewpoints of the other respondents are idiosyncratic. The key point is that no shared viewpoint independent of the core viewpoint or opposed to it emerged from the data.

No other cluster rivals the core cluster X in terms of the homogeneity and the number of respondent viewpoints included within it. It is comprised of 28 respondents, over a quarter of the total. At the same level of homogeneity, only one of the 41 other clusters remaining at this step (a subset of X.2) includes as many as six respondent viewpoints. The others include four or less. Moreover, the remaining distinguishable clusters comprising at least 5% of the respondents merge with X on the basis of relatively small average distances. Consider, for example, the worst case. At step 22 where the X.3 cluster ($n = 16$) merges with the augmented core cluster ($n = 52$), the distance measure indicates that the average correlation among the $16 \times 52 = 832$ pairs of respondent viewpoints between the two clusters is 0.35. The viewpoints included in X.3 are, on average, more similar to the viewpoints in the augmented core cluster than to the relatively idiosyncratic viewpoints in the 21 other clusters comprised of 33 respondents remaining at this step. The latter join the augmented core cluster at large distances.

The conclusion that there exists only one shared viewpoint, organized into core and peripheral variations, is supported by the pattern of correlations among cluster profiles. A cluster profile is the average score (or rank) of each of the 48 statements assigned by members of the cluster. It can be interpreted as the Q-sort that would have been provided by an “ideal” or “perfect” representative of the shared viewpoint. The averaging procedure used to form cluster profiles suppresses the dispersion of statement scores (or ranks) among cluster members. If the shared viewpoints were independent, the correlation between their cluster profiles would be approximately zero. If the shared viewpoints were opposed or polarized, the correlation between their cluster profiles would be negative. As shown in Table 1 the correlations between the profiles are consistently high and positive. X is not only the most homogeneous cluster of respondents, as we have seen; its profile is also highly correlated with the average

TABLE 1
Correlations Among Cluster Profiles

Clusters	X	X.1	X.2	X.3	All Rs
X	1.00				
X.1	0.76	1.00			
X.2	0.72	0.52	1.00		
X.3	0.72	0.72	0.46	1.00	
All Rs	0.96	0.83	0.71	0.84	1.00

viewpoint in the peripheral clusters and with the average viewpoint in the sample as a whole.

Before turning to the content of core and peripheral viewpoints, it is worthwhile to examine alternative explanations. The structure of the data may not be the best explanation for the emergence of only one shared viewpoint in several variations. One alternative explanation is that the organization of viewpoints summarized in Fig. 1 is an artifact of the average linkage method. The best test of this possibility is to apply the complete linkage (or farthest neighbor) method to the same data. Under this method:

When two clusters join, their similarity is that existing between the farthest pair of members, one in each cluster. The method will generally lead to tight, hyperspherical, discrete clusters that join only with difficulty and at relative low overall similarity values [4].

With these data the complete linkage method does produce relatively discrete clusters that join late in the procedure at the lower-numbered steps. However, the classification of respondents produced by this method is similar to the classification produced by the average linkage method for these data. And the cluster profiles reveal that the statements having rather high positive and negative mean scores are the same statements that anchor the cluster profiles produced by the average linkage method. In other words, profiles of the clusters generated by the two methods are quite similar.

Another alternative explanation is that the organization of viewpoints summarized in Fig. 1 is an artifact of the particular opinions included in the sample of 48 statements. More specifically, the possibility exists that the sample of statements is biased in the direction of highly consensual statements. There are inherent difficulties in testing this alternative because the universe of possible statements is essentially unbounded, and because there is no nonarbitrary standard to distinguish a biased from an unbiased sample. However, we applied the average linkage method to the data set that excluded the six statements having the highest mean scores (positive or negative direction) in the cluster of all respondents. The classification of respondents and the organization of viewpoints is quite similar to that summarized in Fig. 1. In short, deleting the most consensual statements from the sample of 48 statements makes little difference.

A third alternative explanation is that the organization of viewpoints is an artifact of the set of 101 respondents interviewed for this study. In the absence of other collections of respondents interviewed in the same way at the same time, little can be said conclusively. Interviewers were instructed to select respondents according to diversity of sociodemographic characteristics in order to minimize the possibility that any significant viewpoint existing in the population would go undetected. The procedures used here are sufficiently sensitive to detect the existence of an independent or opposed viewpoint if only several representatives of the viewpoint are included [5].

The organization of viewpoints that emerges from these data represents an approximate consensus on the intensity and direction of a number of energy-related attitudes and opinions, but not necessarily on their meanings. In this instance, as in legislatures, markets, and other political and social settings, agreement among a number of people on a set of propositions masks a variety of differences among individual interpretations of the propositions and the reasons for accepting them. Under these circumstances, interpretation reflects one's observational standpoint, and no single interpretation, including the interpretation of the analyst, is exhaustive.

IV. The Shared Viewpoints: Core and Periphery

Recall that a cluster profile is formed by averaging the scores (or ranks) assigned to each statement by members of the cluster. As a result of this operation, the statements that are matters of importance *and* consensus turn out to have the most extreme scores, tending toward +5 and -5. The 13 statements having the most extreme mean scores (greater than |2.5|) in the core viewpoint profile are reproduced in Table 2. The other 35 statements, with means tending toward zero, are either relatively insignificant *or* relatively controversial among members of the core cluster.

As we have already suggested, interpretation of this shared viewpoint (or any other) is by no means straightforward. On the one hand, a number of plausible themes may be woven among the various combinations of two or more statements. On the other, each statement may have a number of connotations depending upon the context of other statements with which it is associated. The process is inherently open-ended. Here we begin the process by starting with the manifest content of the viewpoint profile, and in particular with the statements having the highest degree of significance and consensus.

Core Viewpoint

Respondents in the core cluster object most strongly to the location of new nuclear power plants in the areas where they live (16, -4.1). However, there is very little consensus on the broader issues of whether the nation needs more nuclear power or whether federal subsidies for nuclear power are appropriate (see statements 24 and 12

TABLE 2

Cluster X Profile: The Most Significant and Consensual Statements*

Most disagree	Most agree
<p><u>16.</u> I have no objections to the location of a new nuclear power plant in the area where I live.</p> <p>(-4.1, -0.9, -4.7, +0.9)</p>	<p><u>34.</u> An increase in gas and electric bills means more hardship for the poor and those on fixed incomes.</p> <p>(+3.7, +4.1, +2.6, +2.3)</p>
<p><u>30.</u> We should accept additional risks to public health and safety in order to deal with the energy crisis.</p> <p>(-4.0, -3.5, -3.9, -1.6)</p>	<p><u>33.</u> Not even the experts know how to safely dispose of radioactive wastes from nuclear power plants.</p> <p>(+3.4, +3.1, +3.7, +1.3)</p>
<p><u>26.</u> Consumer prices of gasoline, natural gas, fuel oil and electricity are too low.</p> <p>(-3.8, -1.9, 0.0, -2.9)</p>	<p><u>6.</u> Energy research and development should emphasize renewable energy sources like solar energy.</p> <p>(+3.3, +3.1, +3.9, +3.9)</p>
<p><u>47.</u> The oil and gas companies deserve the trust of people like me.</p> <p>(-3.4, -2.3, -1.6, -1.4)</p>	<p><u>8.</u> We should do whatever we can to make our jobs and incomes less dependent on foreign oil.</p> <p>(+3.3, +3.1, +3.0, +3.4)</p>
<p><u>1.</u> Over the next twenty years, solar energy just can't make much difference in meeting the nation's energy needs.</p> <p>(-3.2, 0.0, -1.0, -3.5)</p>	<p><u>46.</u> Oil and natural gas have been withheld from the market to force consumer price increases.</p> <p>(+3.3, +2.8, +0.3, +2.7)</p>
<p><u>43.</u> I won't cut back on my energy use until others make the same sacrifice.</p> <p>(-2.7, -0.1, -2.6, -2.6)</p>	<p><u>18.</u> I want better information about how the energy crisis affects me and my community, and what we can do about it.</p> <p>(+2.6, +2.0, +1.1, +1.9)</p>
	<p><u>35.</u> I don't know whom or what to believe about the energy situation.</p> <p>(+2.5, +2.0, -0.3, -0.2)</p>

* The figures in parentheses are cluster means for clusters X, X.1, X.2, and X.3, respectively. Means for cluster X are underscored.

in the Appendix). Opposition to the siting of nuclear power plants in nearby areas appears to be the focal point of health and safety concerns. These respondents reject the proposition that we should accept additional risks to public health and safety in order to deal with the energy crisis (30, -4.0); and they believe that not even the experts know how to safely dispose of radioactive wastes from nuclear power plants (33, +3.4).

These respondents express substantial support for solar energy. They agree that renewable energy sources including solar should be emphasized in energy research and development (6, +3.3); and they reject the proposition that solar energy cannot make much difference in meeting the nation's energy needs over the next twenty years (1, -3.2). Other sources of supply are less significant, although modest support exists for increasing the domestic production of oil and gas and for the commercialization of synthetic fuels (App. 10, 25). These views on supply may be related to expressed support for the goal of reducing the dependence of our jobs and incomes on foreign oil (8, +3.3).

While the emphasis appears to be on ensuring supplies of energy (subject to environmental constraints), there are also signs of support for reducing demand. These respondents reject nonconservation by others as a reason for not conserving themselves (43, -2.7); and they express a modest degree of support for the goal of nurturing a resource-conserving ethic (App. 13).

Energy prices are significant primarily in terms of the hardships they impose on the poor and those on fixed incomes (34, +3.7). Some of the respondents may include themselves among those who have experienced such economic hardships, even if they are not poor or living on fixed incomes. They reject the proposition that consumer prices of energy are too low (26, -3.8), a proposition that is the cornerstone of energy policy in the Carter Administration. There is no systematic support for either the policy of oil and gas price decontrol; or the expectation that decontrol will lead to fair and efficient allocation through the market; or the belief that energy price increases are necessary to ensure adequate supplies (App. 28, 3, 22). All of these are among the justifications for price increases in Washington. Consumer price increases are interpreted in part as the result of oil and gas being withheld from the market (46, +3.3).

The viewpoint is also marked by widespread distrust: Those who share it *disagree* on average that the oil and gas companies deserve the trust of "people like me" (47, -3.4); that the local gas and electric companies will do what is best for "all of us"; and to a lesser extent that "people like me" should trust the President to find a solution to the energy crisis. Moreover, they believe that people who direct their hostility toward business or government are *not* just looking for scapegoats. On the positive side is a modest degree of support for organizations that work for consumer interests in energy issues (App. 5, 38, 48, 32).

Related to these manifestations of distrust is a lack of credibility and a demand for better information. Most of these respondents do not know who or what to believe

about the energy situation (35, +2.5). There is no systematic support for a greater effort by the federal government to sell its energy policy proposals to the public, or for the idea that the truth about the energy crisis is difficult to convey to the public (App. 40, 17). But these respondents do want better information about how the energy crisis affects them and their communities, and what they can do about it (18, +2.6).

A general pattern is apparent in the core viewpoint profile. It is a selective emphasis on those aspects of the energy situation that pertain to the immediate circumstances of the respondents or others like them. Note, for example, that the significance of energy price increases, nuclear power, and other energy issues is construed primarily in terms of impacts on individual citizens and the areas where they live. These impacts include health and safety, economic hardships, job and income security, distrust, disorientation, and a sense of unfair treatment.

At the same time, the national implications of these issues are generally discounted. Whether the nation needs energy price increases or nuclear power, and the possible

TABLE 3

Peripheral Cluster Profiles: Differences in Priorities

Core profile			Peripheral profiles					
X			X.1		X.2		X.3	
Rank	St.	Mean	St.	Mean	St.	Mean	St.	Mean
1	34	+3.7	45*	+4.3	13*	+4.7	6	+3.9
2	33	+3.4	34	+4.1	12*	+4.4	4	+3.6
3	6	+3.3	29*	+3.3	6	+3.9	8	+3.4
4	8	+3.3	6	+3.1	41	+3.9	29*	+3.3
5	46	+3.3	8	+3.1	33	+3.7	45*	+2.8
6	18	+2.6	9*	+3.1	8	+3.0	46	+2.7
7	35	+2.5	33	+3.1	15*	+3.0	24*	+2.5
8	4	+2.4	10*	+2.8	34	+2.6	-	-
9	32	+2.3	46	+2.8	-	-	-	-
10	41	+2.3	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
40	27	-2.1	-	-	-	-	-	-
41	2	-2.3	48*	-2.5	43	-2.6	-	-
42	5	-2.4	28*	-2.6	38*	-2.7	-	-
43	43	-2.7	3*	-2.9	36*	-2.9	-	-
44	1	-3.2	5	-2.9	5	-3.1	5	-2.6
45	47	-3.4	2	-3.4	2	-3.3	43	-2.6
46	26	-3.8	30	-3.5	30	-3.9	21*	-2.8
47	30	-4.0	27	-3.8	24*	-4.4	26	-2.9
48	16	-4.1	38*	-3.9	16	-4.7	1	-3.5

* Indicates that the statement is *not* among those statements in the X profile that have a mean greater than |2.0|.

reasons why, are either relatively insignificant or are controversial. These national implications are of course remote with respect to individual experience. There is a tendency to discount the observations and interpretations circulated by government and business, which are not generally perceived as trustworthy sources on the national interest in energy policy. People appear to rely on their own personal observations and interpretations [6].

In short, the energy situation from the viewpoint of these citizens is quite different from the one pictured in corporate headquarters or in Washington. We shall return to this pattern in a later section.

Peripheral Viewpoints

Differences in priorities among the representatives of the peripheral viewpoints are summarized by statement numbers and means in Table 3. Table 3 includes all statements in the three peripheral viewpoints having means greater than |2.5|. Most of these statements are also among the most significant statements in the core viewpoint. The exceptions are noted with an asterisk. Statements referred to in Table 3 are reproduced in the Appendix.

The X.1 viewpoint is marked by a greater emphasis on national energy policy, but the direction of opinion is generally the same as in the core viewpoint. The people who share this peripheral viewpoint support a windfall profits tax and horizontal divestiture of the major oil companies (45, 29); and they reject decontrol of oil and gas prices, and the supporting expectation that decontrol would lead to fair and efficient allocation through the market (28, 3). Hardships created by energy price increases appear to be among the reasons (34). Concern for public health and safety is also found in this viewpoint (30, 33), but it is not focused on nuclear power (16). Distrust is heightened in this viewpoint, but the focus is shifted primarily to the President, the experts, and local utilities (38, 27, and 5). These respondents agree that "people like me" are ignored when big business and big government make energy policy in Washington (9). The general impression is that in this viewpoint, as opposed to the core viewpoint, distrust is expressed in opposition to federal policies that would permit or increase "market" control over energy at the perceived expense of the public.

The X.2 viewpoint is marked by an enhanced concern for environmental protection (30, 41, and 33) and energy conservation. These respondents strongly endorse the goal of nurturing a resource-conserving ethic (13), oppose the promotion of energy consumption through advertising (15), and reject one of the rationalizations for not cutting back on personal energy consumption (43). Concerns for environmental protection and conservation appear to be focused in a rejection of nuclear power, both in the areas where the respondents live (16) and as an energy alternative supported by the federal government (12). They strongly agree that the nation does have alternatives to increased dependence on nuclear power (24). These themes can be discerned in the core viewpoint, but they are enhanced and generalized here. The major difference

between the core viewpoint and the X.2 viewpoint is that the latter shows little concern for energy prices (26). Incidentally, representatives of both the X.1 and X.2 viewpoints reject the threat or use of military force if an energy crisis is imposed on them (2).

The X.3 viewpoint is less homogeneous than the others. It is marked by the strongest support for both solar energy and for nuclear power, and by the least support for environmental protection. In the case of nuclear power, there is little consensus on the location of a nuclear power plant in the areas where these respondents live (16), but they do believe that the nation must increase its dependence on nuclear power (24), and there is some support for federal subsidies (12). The most important concern appears to be anxiety over the world energy situation (4), and its threat to their jobs and incomes. This theme is apparent in the core viewpoint, but magnified in significance here.

Sociodemographic Characteristics

The sociodemographic characteristics of the respondents, including the others (unclassified), are summarized in Table 4. These distributions refer to the set of respondents and not to the population at large.

In general, there are few differences among the cluster members. In terms of age cohorts, the distribution of cluster members departs only slightly from the distribution expected on the basis of relative cluster size. The distribution by sex conforms even more closely to the expected distribution. (Other studies have shown a tendency for women to prefer anti-nuclear and pro-environment positions over men. These positions are most apparent in the core cluster X and the peripheral cluster X.2, as we have seen.) At least one respondent from each of the broad regional classifications is a member of each of the clusters. If regional differences are important in the population, such differences are not apparent among these respondents.

Differences do appear, however, with respect to education. The members of the X.2 cluster, the most strongly anti-nuclear and pro-environment, are the most highly educated. Five of the seven have done graduate work, and none have only 13 years of education or less. The members of the core cluster have the next most education, and the members of the X.1 and X.3 clusters have the least.

The respondents who hold the more idiosyncratic viewpoints, and are therefore unclassified, are disproportionately less educated and more elderly. Nine of the 13 respondents aged 66 and over (or 69%) are among the unclassified. Twenty-nine of the respondents with 13 years of education or less (or 51%) are among the unclassified.

V. Individual Interpretations

Individual interpretations of a shared viewpoint can be clarified through unstructured, follow-up interviews with the best representatives. The best representatives are

TABLE 4
Sociodemographic Description of the Respondents by Cluster

	X	X.1	X.2	X.3	Others	Totals
Age						
35 or less	10	2	3	6	8	29
36-50	7	3	2	4	10	26
51-65	7	3	2	6	13	31
66 or more	4	-	-	-	9	13
No report	-	-	-	-	2	2
Sex						
Male	13	3	3	7	18	44
Female	13	5	4	9	22	53
No report	2	-	-	-	2	4
Education (Years)						
13 or less	12	5	-	11	29	57
14-16	11	3	2	4	9	29
17 or more	5	-	5	1	2	13
No report	-	-	-	-	2	2
Region						
East	13	4	4	7	25	53
South	5	1	1	5	6	18
West	10	3	2	4	7	30
Totals	28	8	7	16	42	101

those respondents whose Q-sorts have the highest correlations with the viewpoint profile. Interviews with four of the best representatives of the core viewpoint are summarized in this section [7]. As shown in Table 5, their Q-sorts are also positively correlated with the peripheral viewpoint profiles. The interviews were unstructured in that the representatives were simply encouraged to talk about the energy situation with a minimum of specific and substantive cues from the interviewer. Because the interviews were conducted about two months after the Q-sorts, they provide information about the directions of evolution of viewpoints as well as potentially corroborating information from an alternative observational standpoint.

Mrs. A is a 52-year-old, middle-class housewife, who has a high school education and lives in a suburb of a large Midwestern city. Of all the respondents, she is the best representative of the core viewpoint. Mrs. A acknowledges that as a layman she is not knowledgeable enough to know how bad the energy situation is. But Mrs. A and her

family and friends have come up with “conceivable solutions” and she does not understand “why our representatives either can’t or won’t or don’t see what we see as the little people.” Moreover, those who publicly comment on the issue have not done much themselves to improve the situation.

I think we have the ability [in this country], and that we have the know-how, and if the money has to be gotten, I’m sure it can be gotten. I have to . . . believe it’s a political thing: That they *won’t* do anything about it.

Mrs. A believes that some politicians are honest and principled, and go to Washington with good intentions.

But I think once they get there they become part of . . . the Washington scene. I think they become intimidated, and then become intimidators . . . I think you either join the group, or they don’t let you play in the game . . .

Mrs. A wants to believe them, but feels that realistically she cannot. They have promised too much and delivered too little, and have “an awful lot of fence mending” to do. “It’s not going to be easy for this country to totally believe in the men that they put into office.”

According to Mrs. A, the oil companies are taking advantage of an unexpected windfall and getting very rich. They did not realize what was happening, but now “they like what’s happening and they’re not going to do anything about it.” They are holding back production and creating shortages to drive the price up. (Mrs. A sees some parallels in increases in coffee and sugar prices a few years ago.) Who stands to gain from that?

You and I – I know we won’t. The oil companies will get much richer. They are supposed to be reinvesting so much of this money into creating new forms of energy. I am sure with a good accountant and a couple of probably very bright people around they can make it look on paper that they’re doing it. I

TABLE 5

**Correlations Between Individual Q-Sorts
and Core and Peripheral Viewpoint Profiles**

Respondents	Viewpoints			
	X	X.1	X.2	X.3
Mrs. A	0.82	0.68	0.62	0.66
Mr. B	0.77	0.62	0.52	0.51
Mrs. C	0.76	0.44	0.47	0.55
Mr. D	0.75	0.58	0.57	0.62

don't really think they will [do it] . . . I don't think they're really going to put that money back into production.

The guy who works to keep his family together, put his kids through school – he's the one who's going to suffer for it. The rich will only get richer and the poor will have Medicaid and welfare . . . The guy who works for a living won't be able to afford it . . .

Mrs. A believes that energy prices are not only excessive, but “ridiculous.” “But they have the people by the throat – what are you going to do?”

Mrs. A's skepticism carries over to the news media.

I don't know how much of what the media tell us is the truth either. We're at the mercy of television and the newspapers and the radio, and you don't hear anything good anymore. You just hear a prophet of doom. And it's depressing . . . I think we are given to read and to listen to what they want us to hear and read.

The result of this is that:

People like us have become distrustful, have become fearful. They've scared us, they've frightened us into thinking that in another 10–15–20 years, God only knows, we'll have no food, we'll have no energy. There won't be anything . . . I don't believe that it has to be that way . . . I don't know the answer, I just know that there's no confidence in the government, and I think, I really believe, that we've been lied to so many times that it is just like the little boy that cried “wolf”.

At a later point Mrs. A puts the matter more succinctly:

. . . ignorance breeds fear. And that's why people panic and get scared and don't think, and do things that they wouldn't do if they stopped and thought about it. It's because they just don't know what's really going on.

Mrs. A reports that she and her husband have cut back on their consumption of energy, and have decided to skip their normal summer vacation, a drive of several hundred miles round trip. Yet she feels like something of a sucker, with people in Washington,

. . . having chauffeurs and flitting around the country. And then you figure, well why should I [cut back]? . . . You get to the point when you really feel, what the heck, it's going to happen anyway, I might as well enjoy myself before it does. And that's a sick attitude. I don't like that . . . I don't like to have my children hear me talk like that. And it frightens me when I hear my kids talk like that . . .

This is a profound conflict for Mrs. A, rooted in part in her experience as a child growing up during World War II. Nobody complained about making sacrifices then; indeed, people took pride in making sacrifices for the country. But “the pride in the country's not there today . . . you can't have pride in something you don't trust.”

The inference is inescapable that Mrs. A feels a deep but frustrated need to believe in her country and its leaders, and to “pull together and try to do something” as she once did. This need is reflected in her principal suggestion for dealing with the energy situation:

... if the situation is as desperate as they lead us to believe, the only way that it's going to get any better, is to get everybody to work to do it better. And that can only come from the higher-ups. Something's got to give just to make people want to do it. I don't know how.

These comments by Mrs. A illuminate her interpretation of a number of statements that figure prominently in the core viewpoint profile. Her comments bearing on several other statements, though subsidiary from her viewpoint, are worth reviewing briefly. Mrs. A is upset by our continuing dependence on foreign sources of oil. As she puts it, "I hate to see foreign countries have such a power over us." She believes that we have the resources to increase production and reduce this dependency, but lack the political will. Enhanced production of coal and solar energy, increased refinery capacity, and energy-efficient designs in new buildings are among her "conceivable solutions." While nuclear power might also reduce our dependence, she is frightened by the health and safety implications. She did not give the matter much thought until the accident at Three Mile Island and subsequent disclosures of accidents at other plants. "I don't think that most people fully understood what nuclear power was and how powerful, how dangerous, it can be." However, "I think if they [the authorities] have got their mind made up to go the way of nuclear power, they're going to do it, and I don't think it means a hill of beans what the people think."

Mr. B is a 37-year-old clergyman who lives in a South Atlantic state. He is most concerned about the safety of his family and whether "our lives are going to be able to continue as they have been - if I can go where I want to go and do the things I want to do." Mobility is a particularly important matter of life-style because Mr. B's impending move to another part of the country is threatened by the gas shortage and the truckers' strike. What is the source of the problem?

Well ... I don't know. I think that's the frustrating part of it. I don't know whether it's government or whether it's the oil companies, whether it was just poor planning for a long time. ... I think the frustrating thing for me is the fact that I don't know what to believe, and I don't know I can really trust them when they say something to me about the energy stuff ... If I could see that they were really addressing the problem ... It's just so nebulous and so uncertain.

Coupled with this distrust and uncertainty is a sense of political inefficacy:

... I don't really feel like I have any arena to do anything about what's going on. It seems to me that those decisions are made by a few people and I'm not really convinced that they are made for the good of the people. I think they're made for the good of the companies, of those people who are going to make all kinds of profits off this oil stuff.

Mr. B has recently come to believe in the long-term potential of solar energy, and supports conservation as a matter of personal and public action. But he describes nuclear safety and the disposal of radioactive wastes as a main concern, and his comments on the accident at Three Mile Island stand out in terms of intensity. He was "angry" that such plants had been built in populated areas. And,

... it seems like they had people in there who don't even know what they are doing. It also seems like the people who are supposedly able to regulate these things don't really have that much control over them, don't even have a whole lot of expertise in them. It's kind of shattering.

Mrs. C is a 55-year-old housewife who does volunteer work and lives in an upper-class neighborhood of a Western city. For her, "the most important thing is that new sources of energy should be developed as rapidly as possible." These include gasohol, oil shale, solar energy, and "all of the natural things we can use." She is "very much opposed" to nuclear power:

... we're gonna poison the world for our next generations to come because there's no place to put the waste. I just wish that they would close down the ones that they started already and use all the money that they are funneling into that program [in] these other programs. I think we're playing with God when we mess around with that stuff.

Mrs. C believes that energy prices are *probably* fair and reasonable if they do not continue to go up, but *if* production is being withheld to raise prices, "that's wrong." "I am fortunate that we can pay for those things with our income. I feel very bad for people with fixed incomes." Although it is apparently not necessary for financial reasons, Mrs. C has reduced the use of her automobile to the point that she pays no more for gasoline, in spite of recent large increases in the price. Mrs. C professes skepticism,

... about everything and everybody anymore. I don't even like to hear news anymore, it's so discouraging ... I don't have much faith in the President anymore or [in] the oil companies.

Mrs. C noted at a later point in the interview that people in her area place more trust in local leaders. "They feel they have a little more control over them."

Mr. D is a 27-year-old heavy construction worker who lives near a large metropolitan area in a Plains state. From his viewpoint,

... the most important thing is that ... changes need to be made to supply enough energy for the national growth. I think it's important to maintain the life-style of this country, which is probably one of the highest in the world ... With technology, if there's an honest attempt made by all parties involved, we can start relying more heavily on our renewable energy sources and start conserving our fossil fuels ...

These needs are related, in Mr. D's view, to larger problems of social and political stability. He believes that people "with the big buck" have taken advantage of the energy situation and undermined the life-styles, the standards of living, of the lower and middle classes. This problem,

... has to be worked out or you're going to run into real problems ... you [will] get a massive discontent of the greater portions of this country, which are an educated people. I mean it's not a bunch of ignorant masses that are going to take somebody's word for something. They know better. I think that's the only threat to this country as far as revolution, and if they disturb enough people at the same time due to something like this ...

Mr. D returned to this theme at the end of the interview when asked if he would like to make a summary statement.

Yes. I think the country is going to have to do it peaceably. They're going to have to take the whole society into account and treat them like men, 'cause if you try and do something and put the whole burden on the shoulders of the guy that's hurting the worst anyway, you're going to run into trouble.

Mr. D. has little faith in government "red tape and bureaucracy." He also has little faith that the major oil companies will accept reasonable profits and avoid taking "too big of a bite at somebody else's expense when it's just totally unnecessary." He supports his contention that energy price increases are contrived by referring to his own observations made at jobs around power plants and oil refineries: "... the reasons put out for the increases in prices just don't jibe with what I'm seeing every day."

To Mr. D, nuclear power plants are "potentially harmful to people" and there is no need for the government to rush them on line.

They're going to have a bad accident and they're going to have everything out: "O.K., we're going to shut these down." So all of a sudden you've got all these things just sitting there, monuments to nothing.

He expected something like the incident at Three Mile Island would happen, and he had heard of "at least a half a dozen other incidents that never hit the news" from fellow construction workers. Mr. D believes that a large number of small, decentralized generating sources is a much more reliable way to go, despite resistance by government and industry. The local power company apparently frustrated his attempt to put up a small wind generator and tie it into the line between the meter and the breaker box in his new home.

These interviews are intended to clarify individual interpretations of the principal statements in the core viewpoint and to suggest some of the origins of these interpretations. It is beyond the scope of this paper to attempt an evaluation of the opinions volunteered in terms of their grounding in the facts of the current context and the values that have been assimilated into American culture through centuries of experience. Two observations can be made by way of conclusion, however. One is that these opinions cannot be easily dismissed as unrealistic or unworthy inputs to policy planning and evaluation [8]. Another is that for promotional purposes, the realism and moral worth of these opinions is a secondary consideration. These opinions, to the

extent they are shared, are important factors in shaping the success or failure of any attempt to mobilize the public behind an energy plan or to elicit voluntary compliance with energy policies already enacted.

VI. The Evolution of Viewpoints

In this section we consider the pattern of evolution of citizen viewpoints, both past and prospective.

Short-Term

More than a year ago, a pilot study using a similar Q-sample in a Midwestern city revealed three public viewpoints on energy policy. They emphasized:

(1) Energy conservation and environmental protection, with little faith in either experts or the federal government.

(2) Energy production increases, maintenance of living standards, and rejection of higher energy prices, with distrust of the federal government and the energy industries.

(3) Rejection of government intervention, faith in the market, and the need for higher energy prices, coupled with distrust of the public.

According to an independent estimate, the second viewpoint comprised about two-thirds to three-quarters of the national population, while the first and third viewpoints included about one-eighth and one-tenth, respectively [9]. Although the pilot study is far from conclusive, it does provide a suggestive benchmark.

Based on similarities with the current results, the second viewpoint in the pilot study appears to be the common antecedent of both the core viewpoint X and the peripheral viewpoints X.1 and X.3; the first viewpoint appears to be the direct antecedent of the X.2 viewpoint; and the third (or market-oriented) viewpoint appears to have disappeared as a distinctive, shared viewpoint. To be sure, a number of the respondents in the current study sorted certain statements (App. 28, 3, 45, 29, 26) in ways that can be interpreted as market-oriented, and six respondents provided a relatively consistent pattern in this direction. But the market-oriented perspectives of these six are subordinate to other perspectives, and the distances among their Q-sorts are relatively large. One is classified as a member of X, another as a member of X.2, and the remaining four are scattered among the unclassified peripheral respondents.

Based on differences between the earlier results and the current results, it appears that health, safety, and environmental concerns have intensified relative to others over time; and that opinions on nuclear power have intensified and shifted in the direction of opposition, particularly opposition to the siting of new nuclear plants in nearby areas. The most plausible interpretation is that these changes represent the impact of the incident at Three Mile Island, which focused and sustained attention in the news for several weeks. (Quite unintentionally, the Q-sorts were obtained in the five-week period immediately following the incident.)

Representatives of the core viewpoint are now strongly opposed to new nuclear power plants in the areas where they live, having been impressed, presumably, by the impact of the incident on people like themselves in the Harrisburg area. (See the comments on the incident in the interview summaries above.) Apparently, nuclear power is now perceived less as a source of energy that contributes to domestic energy production and living standards than as a threat to public health, safety, and the environment. Though representatives of the X.1 viewpoint are less opposed to new nuclear power plants in their areas than are the representatives of the core viewpoint, they are now noticeably more concerned about public health and safety. The representatives of the X.3 viewpoint appear to be unaffected. Their shared viewpoint remains a rough approximation to the second viewpoint in the pilot study.

In short, the incident at Three Mile Island appears to have precipitated movement of the second pilot-study viewpoint in the direction of the first, and mitigated the differences between the two. At the same time, the issue of nuclear siting raised by the incident appears to have split the second viewpoint into two peripheral variations. In a rough and approximate way, this pattern of evolution appears to account for the principal differences between the results of the two studies.

The impact of the incident at Three Mile Island as reconstructed here may dissipate in relative intensity as Three Mile Island recedes further into the past and other events dominate public attention. The unstructured interviews summarized above provide some preliminary indications. Although strong opinions were still expressed in opposition to nuclear power in June 1979, other issues were deemed more important.

Longer-Term

Other themes in the core and peripheral viewpoints – economic insecurities (if not hardships), distrust, disbelief, disaffection, and undertones of moral outrage – have tended to persist over several years. This persistence is rooted in recurring events, particularly sustained energy price increases and intermittent shortages, and statements about them circulated through the national news media. These are the principal ways in which the energy situation enters into the experience of individual citizens and to some extent coordinates their viewpoints [10].

A struggle over national energy policy is conducted through the news media because the principal factions of the policy-making elite have been unable to agree among themselves on a number of key issues, despite their access to expert opinion and analyses [11]. Under these circumstances, each faction perceives an opportunity to advance its policy positions and interests by appeals to a larger audience. Diagnoses and prescriptions circulated to the public through the news media by one faction tend to be contradicted by one or more of the others, who sometimes also attempt to discredit the opposition directly. Moreover, some statements circulated for public consumption are perceived to be contradicted by observations and interpretations that citizens can make on their own. For example, the assertion that we are faced with

a profound crisis tends to be undermined when projected shortages do not materialize; and the localized and transitory shortages that have occurred tend to be interpreted in part as deliberate attempts to force price increases [12]. Meanwhile, everyone has experienced increases in gasoline and utility bills, but few perceive significant progress toward such widely acclaimed goals as reducing our dependence on foreign sources of oil.

The short-term impacts on the public are not exclusively or even primarily economic. To be sure, poor and fixed-income households have suffered economic hardships. But middle- and upper-income households so far have been able to accommodate increased energy costs with relatively minimal strain on household budgets, and energy shortages so far have been localized and temporary for all income classes. One important impact is the calling into question of prior beliefs. For example:

- Someone must understand the situation. But why do the experts disagree?
- We have a lot of know-how in this country. But why can't we solve the problem?
- We've managed so far. But what's going to happen in the future?
- I pay more for energy now. But why doesn't this increase energy supplies?
- Americans pull together in a crisis. But is there really a crisis?
- I'm ready to do my part. But am I being taken for a sucker if I do?
- Others have been affected the same way I have been. But why don't they listen to us?
- This is a government of the people. But does it protect the interests of people like me?

Another impact is to question the preferences built into individual life-styles:

- What will I have to give up?

Still another is to question previous loyalties:

- Whom can I trust?

Where such questions are difficult to resolve at the personal level, anxieties and insecurities cumulate and weaken the constraints of reason and conscience. This increases the demand for emotionally satisfying rather than realistic or just solutions.

One such emotionally satisfying "solution" is scapegoating, which provides temporary relief of the symptoms (catharsis) [13]. It is no accident that personal insecurities arising from the energy situation (and other sources as well) are displaced on the President, the government generally, the oil and gas industry, other energy industries, and the like. For one thing, they figure most prominently in the energy debate in Washington, as covered in the news over the last several years. For another, they have consistently focused and refocused the debate on energy price increases. That energy prices should increase is largely a matter of consensus in Washington. What has been at issue is: Who should administer the price increases, at what rate, and who should dispose of the proceeds? The principal options are government and business (through reliance on "market" processes). The energy price debate encourages the assumption that government and business are to blame: citizens tend to view

energy price increases as the problem, not the solution [14]. Government and business, in short, are both highly visible and plausible targets.

The effects are multiple and reinforcing. Responsibility and blame are focused on government and business. This further undermines trust in government and business, already in doubt before the 1973–1974 oil embargo. Distrust further reinforces the tendency to discount statements about the nation's energy situation from these sources, sometimes without examining them carefully. People fall back on their own observations and interpretations in an attempt to make sense of the situation. But this selective focus leaves many key questions unresolved, and insecurities are further exacerbated. For the respondents included in this study, whatever hopes remain for a better future appear to be displaced on solar energy and to a lesser degree consumer organizations. Both solar energy and consumer organizations so far have assumed a relatively peripheral role in the national energy debate.

The symptoms of such adjustments appear to be manifest in the viewpoints explored in this study and in previous studies. The energy situation viewed from the grass roots is indeed different from the energy situation as seen from Washington. The political problem so far is less the existence of these differences and the cumulation of insecurities than our inability to deal with them constructively. At some level, however, the cumulation of insecurities interferes with constructive problem solving.

A Look Ahead

What changes in viewpoints might occur over the remainder of 1979? The most probable projection is further intensification of insecurities. Reassurances, pessimistic forecasts, and additional plans and exhortations from Washington or from corporate headquarters will probably have little effect on the evolution of public viewpoints, unless they depart substantially from previous announcements and make sense in terms of the direct experience of individual citizens. Both practice and systematic inquiry indicate that propaganda and other representations that are inconsistent with predispositions tend to have little effect, unless supported by something more than words. Among the key predispositions in this instance are distrust and disbelief. Whatever is said and done in Washington or corporate headquarters, the price increases now originating in part in the Middle East will generate additional tension, and this will be exacerbated by the impending recession.

Some changes are possible, however. Unanticipated events like the incident at Three Mile Island cannot be ruled out in nuclear policy or in energy policy generally.

Another possibility is that the early stages of the 1980 Presidential election campaign will surface a person who can tap the existing tension and insecurities, satisfy the needs for credibility and reassurance, and mobilize the public behind new energy policies that could be constructive or destructive. If one "solution" to the emotional demands of the situation is scapegoating, another may be blind subservience to a leader who appears to satisfy those demands.

Still another possibility is that personal insecurities, social tension, and a general sense of crisis may be deliberately exacerbated by word or deed, on the expectation that citizens and organized groups would therefore subordinate their perceived self-interests and pull together in concerted (and perhaps desperate) action. Whether something like this has already occurred in energy policy is difficult to determine on the evidence available. In any case, agreement on major energy issues has been realized during short-term emergencies such as the 1973–1974 oil embargo; and recent gasoline shortages on the West and East Coasts have been viewed as a major promotional opportunity.

Finally, there is a possibility of a concerted attempt to deflect responsibility and blame for the energy situation away from the principals in the domestic policy debate and toward alternative targets overseas, particularly the oil-exporting countries. Whatever the consequences for domestic politics, this tactic entails an increased risk of curtailments in the global supply of oil and an increased risk of armed conflict. Advocates of nonviolent action may be partially reassured that the public for the time being is predisposed against the threat or use of military force (see App. 2).

The problem of projecting short-term movements in citizen viewpoints is particularly difficult in the current situation. On the one hand, heightened personal insecurities, social tension, and distrust are destabilizing. The inner constraints of conscience and reason have been weakened, and there exists an enormous amount of emotional energy that can be tapped and channeled in many directions. On the other hand, the political stalemate in Washington, which accounts in part for the emotional climate, is rooted in perceptual and political rigidities that have persisted and intensified over several years. Whether the stalemate will be broken or circumvented, and if so how, are the key uncertainties.

VII. Conclusion

Our energy problems are at least as much perceptual, political, and moral as they are economic and technical. The cost of our present inability to solve these problems cannot be measured in dollars or BTU's alone. The cost includes not only distrust and disbelief, which complicate the adoption of policies that might otherwise be acceptable; it also includes declining confidence in our institutions of government, law, and politics. Founded on moral consensus, these institutions are prerequisites for the orderly conduct of the myriad transactions that take place in a modern society. These transactions include, of course, the production and exchange of goods and services, and the development and dissemination of technical innovations. Declining confidence in public institutions is much more than a minor externality: it could turn out to be the major cost of the energy crisis.

To minimize the cost of the transition to a sustainable energy future, the immediate task is to reduce the rising levels of social tension and personal insecurities. These increase the risks of emotionally satisfying but destructive "solutions." The task is

complicated by widespread public opposition to the major energy policy alternatives advanced so far. It is further complicated by distrust of leaders identified with those alternatives, distrust sufficiently pervasive to render ineffective their future promotional efforts [15]. Although payoffs that are tangible and visible to the public might eventually dissipate these barriers, the major policies now in place or proposed are not expected to realize such payoffs in the short run. Restoration of trust and confidence is a long-run proposition.

We need to rethink energy policies in both the public and private sectors, taking into account the viewpoints that exist at the grass roots. One possibility for circumventing the existing perceptual and political barriers and providing tangible and visible payoffs in the short run is a decentralized strategy [16]. The federal government might encourage local communities to deal with certain aspects of the energy situation, particularly energy conservation and the implementation of small-scale technologies to utilize renewable resources like solar energy [17]. Our results show a significant degree of public consensus on the need to develop renewable resources like solar energy (6, 1), and to provide "better information about how the energy crisis affects me and my community, and what we can do about it" (18) (see Table 2).

In any case, those who are influential in energy policy, and who would therefore be the prime targets in an eruption of moral outrage, have the largest stake in the cultivation of alternative strategies.

Notes

- 1 On Q-techniques, see W. Stephenson. *The Study of Behavior: Q-Technique and Its Methodology* (Chicago: University of Chicago Press, 1953); S. R. Brown, "Intensive analysis in political research," *Political Methodology*, 1 (Winter, 1974), pp. 1-25; and a text by S. R. Brown forthcoming from the Yale University Press. Recent developments are reviewed in *Operant Subjectivity*, edited by S. R. Brown at Kent State University, Kent, Ohio 44242.
- 2 A theoretical framework is used to sample the universe of relevant statements, and not to impose one set of meanings (the investigators') on the statements to the exclusion of others. The framework used to develop this Q-sample is based on eight value categories (power, respect, rectitude, affection, wealth, well-being, skill, enlightenment) and five categories of the problem-orientation (goals, trends, conditions, projections, policy alternatives). The last category, policy alternatives, was used twice. Each of the $8 \times 6 = 48$ conceptual possibilities is represented by one statement in the Q-sample. As reproduced in the Appendix, the columns from left to right represent the value categories in the order listed above; the rows from top to bottom represent the categories of the problem-orientation in the order listed above. For example, statement 8 (We should do whatever we can to make our jobs and incomes less dependent on foreign oil) can be found in the first row and column. It formulates a power goal, reduced dependence. For an explication of these categories, see H. D. Lasswell, *A Pre-View of Policy Sciences* (New York: Elsevier, 1971). Chs. 2 and 3.
- 3 The standard text is P. H. A. Sneath and R. R. Sokal. *Numerical Taxonomy: The Principles and Practice of Numerical Classification* (San Francisco: W. H. Freeman, 1973). See also K. D. Bailey, "Cluster Analysis," in *Sociological Methodology 1975* (San Francisco: Jossey-Bass, 1974), Chapter 2, edited by D. R. Heise; and R. K. Blashfield and M. S. Aldenderfer. "The literature on cluster analysis," *Multivariate Behavioral Research*, 13 (July 1978), pp. 271-295.
- 4 Sneath and Sokal, op. cit., p. 222.
- 5 An analogy illustrates the point. To distinguish apples, oranges, and other kinds of fruit, it is sufficient to draw a small, diverse sample that includes at least a few specimens of each. A large, random sample is superfluous for this purpose, although essential for estimating the proportions of pre-specified types in the population from sample data. There are no sampling distributions to assist the interpretation of cluster results, even if random sampling procedures are used in data collection.
- 6 On this point see the interview summaries in the next section and Bee Angell and Associates, Inc., "A Qualitative Study of Consumer Attitudes Toward Energy Conservation" (November, 1975), prepared for the Office of Energy Conservation and Environment, Federal Energy Administration. In verbatim comments made in unstructured group discussions, people tend to support their opinions on energy issues with first-hand observations or with second-hand observations from relatives and acquaintances. Statements and actions by the President and business leaders are not consistently used for the same purpose. On the contrary, they tend to be rejected explicitly.
- 7 All interviews were conducted by one of the two authors or both. The interview with Mrs. A took place in her home on June 19. The interviews with Mr. B, Mrs. C, and Mr. D were done by long-distance telephone on June 28. During the same period we interviewed four other respondents who were among the best representatives of the peripheral viewpoints. These interviews are not summarized here because of space limitations.
- 8 For example, both public opinions and expert opinions are selective, but in different ways. The tendency of the former to rely on first-hand observations in the immediate surroundings is not necessarily less reliable (according to conventions of evidence) than the tendency of the latter to rely on observations from around the country or the globe that are many times removed from direct experience, aggregated, and filtered through a number of interested parties. The Congress has persistently questioned the dependability and the credibility of the information used in national energy policy planning and evaluation. See, for example, the Congressionally mandated report of the Professional Audit and Review Team, *Activities of the Office of Energy Information and Analysis, Federal Energy Administration* (December 5, 1978). Moreover, the principle of government of, by, and for the people is at least as strong in our cultural heritage as the principle that systematic inquiry should enlighten public policy.

(Notes continued on page 174)

Appendix: The Q-Sample of 48 Statements

8. We should do whatever we can to make our jobs and incomes less dependent on foreign oil. (+3.3, +3.1, +3.0, +3.4)
36. Environmental activists have crippled the growth of the nuclear power industry in this country. (-0.9, +2.4, 2.9, +0.4)
46. Oil and natural gas have been withheld from the market to force consumer price increases. (+3.3, +2.8, +0.3, +2.7)
44. Renewable energy sources like solar power and small river dams could be controlled by people in this community. (+0.7, +1.0, +0.1, -0.2)
29. I support laws to prevent the major oil companies from controlling other energy sources like coal, uranium, and solar collectors. (+1.9, +3.3, +2.1, +3.3)
2. If an energy crisis is imposed on us, I would support the threat or use of military force to deal with it. (-2.3, -3.4, -3.3, -1.4)
42. Energy self-reliance in each local community should be a basic principle of national energy policy. (+1.1, +1.8, +2.0, 0.8)
9. People like me are ignored when big government and big business make energy policy in Washington. (+1.3, +3.1, +0.7, +0.3)
14. Advertisements and speeches telling people what to think and do about energy are often insulting. (-0.4, +1.0, +0.3, 0.3)
23. Eventually we shall learn to respect the natural environment rather than overwhelm it. (+1.8, +0.9, +1.0, +1.8)
11. I wish the government would ask me what I think about the energy situation. (+1.0, +0.6, -0.1, +1.2)
31. I want my representatives in Washington to make whatever deals are necessary to get some action on energy policy. (-1.3, +2.4, 0.9, +1.0)
13. We should nurture a resource-conserving ethic, in which human satisfaction depends much less on material consumption. (+1.7, +1.1, +4.7, +1.2)
21. It's the responsibility of the gas and electric company to make sure we have plenty of energy. (0.3, 1.9, 2.0, 2.8)
20. Improvements in the American standard of living depend on the production and use of more energy. (+0.9, 0.3, 2.3, +0.9)
3. The market will allocate energy supplies efficiently and fairly when prices are no longer controlled by the government. (-1.0, 2.9, -1.1, -1.6)
15. I think it's wrong to promote increased energy consumption through advertising campaigns. (+0.6, +1.8, +3.0, +1.2)
43. I won't cut back on my energy use until others make the same sacrifice. (-2.7, 0.1, 2.6, -2.6)
13. People like me should trust the President to find a solution to the energy crisis. (1.9, 3.9, 2.7, -2.1)
47. The oil and gas companies deserve the trust of people like me. (3.4, 2.3, 1.6, 1.4)
48. Those people who direct their hostility toward business or government when energy problems arise are just looking for scapegoats. (1.7, 2.5, 0.4, +0.9)
5. People in this community will trust the local gas and electric companies to do what's best for all of us. (2.4, 2.9, 3.1, 2.6)
7. I think we should get together in this community to work on our own local energy problems. (+1.0, +2.0, +0.9, +0.1)
32. I support organizations that work for consumer interests on energy issues. (+2.3, +1.6, +1.6, +2.2)

10. We should increase the production of oil and gas in the U.S. as rapidly as possible.
(+1.8, +2.8, 0.6, +1.4)
26. Consumer prices of gasoline, natural gas, fuel oil and electricity are too low.
(3.8, 1.9, 0.0, 2.9)
22. The American people can have more energy only if they are willing to pay higher prices for it.
(1.1, 2.4, 1.1, 0.9)
4. The world is headed toward skyrocketing oil prices and widespread energy shortages in the mid-1980's.
(+2.4, +1.3, +2.1, +3.6)
28. I support removal of government regulations and controls on oil and natural gas prices.
(0.8, 2.6, +1.0, 1.2)
45. I support taxes on the windfall profits of the oil and gas industry.
(+1.7, +4.3, +1.6, +2.8)
30. We should accept additional risks to public health and safety in order to deal with the energy crisis.
(4.0, 3.5, 3.9, 1.6)
37. People like me are tired of seeing "the energy crisis" in the headlines after all these years.
(0.1, +0.5, 1.1, 1.3)
34. An increase in gas and electric bills means more hardship for the poor and those on fixed incomes.
(+3.7, +4.1, +2.6, +2.3)
24. Realistically, the nation has no alternative but to increase its dependence on nuclear power.
(1.0, +1.8, 4.4, +2.5)
16. I have no objection to the location of a new nuclear power plant in the area where I live.
(4.1, 0.9, 4.7, +0.9)
41. I support vigorous enforcement of existing environmental protection laws and regulations.
(+2.3, +1.5, +3.9, +1.1)
27. Only the experts should be considered competent to say what can be done about the energy situation.
(2.1, 3.8, 1.3, 2.4)
33. Not even the experts know how to safely dispose of radioactive wastes from nuclear power plants.
(+3.4, +3.1, +3.7, +1.3)
19. New energy technologies create as many problems as they solve.
(0.0, +1.3, 1.4, 1.6)
1. Over the next twenty years, solar energy just can't make much difference in meeting the nation's energy needs.
(3.2, 0.0, 1.0, 3.5)
25. I support federal government subsidies for the commercialization of gasoline made from coal and shale.
(+1.6, +1.4, 0.1, +1.6)
12. I oppose the federal government's promotion of nuclear power through subsidies and other advantages.
(+0.1, 1.1, +4.4, 1.4)
6. Energy research and development should emphasize renewable energy sources like solar energy.
(+3.3, +3.1, +3.9, +3.9)
35. I don't know who or what to believe about the energy situation.
(+2.5, +2.0, 0.3, 0.2)
17. Because the truth about the energy crisis is so complex, it's difficult to explain to the public.
(0.4, 1.3, 0.0, +0.5)
39. Any efficient and effective energy policy will have to be directed by the federal government.
(+0.2, 1.0, 0.1, 2.1)
18. I want better information about how the energy crisis affects me and my community, and what we can do about it.
(+2.6, +2.0, +1.1, +1.9)
40. I would like to see more effort by the government to sell its energy policy proposals to the public.
(+0.4, +1.0, 0.6, +1.4)

- 9 The results are reported in R. D. Brunner, "Citizen Viewpoints on Energy: Richmond, Indiana" (March, 1978). The independent estimate was made by the former Director of Marketing Research, Office of Energy Conservation and Environment, Federal Energy Administration. It was based on statements in the Q-sample that distinguished the three viewpoints and were similar to items that had been included in a number of national sample surveys sponsored by the FEA.
- 10 This analysis incorporates propositions from a number of studies of public opinion and mass movements, including several classics: W. Lippmann, *Public Opinion* (New York: The Free Press, 1965 ed.); H. D. Lasswell, *Psychopathology and Politics* (New York: Viking Press, 1960 ed.), especially Ch. X; H. D. Lasswell, *World Politics and Personal Insecurity* (New York: The Free Press, 1965 ed.), especially Part III; and H. D. Lasswell and A. Kaplan, *Power and Society* (New Haven: Yale University Press, 1950), especially the chapter on symbols. For a brief analysis of the interplay of symbols, conditions, and public opinion in the 1973-1974 oil embargo, see R. D. Brunner, "An 'intentional' alternative in public opinion research," *American Journal of Political Science*, XXI (August, 1977), pp. 454-459.
- 11 On the diversity of interests among the policy-making elites see "Industry's views on the critical choices," *New York Times* (April 20, 1977) and the numerous published critiques of major Presidential energy initiatives such as the National Energy Plan introduced in April 1977. A glimpse of the politics of energy policy planning can be found in L. H. Lapham, "The energy debacle," *Harper's* (August, 1977), pp. 58ff. Ideological differences among energy policy experts are a persistent theme in the work of A. B. Lovins, particularly "Cost-risk-benefit assessments in energy policy," *George Washington University Law Review*, 45 (August, 1977), pp. 911-943.
- 12 Comments on press coverage of projected natural gas shortages can be found in R. Morris, "Whatever happened to the natural gas crisis?" *Columbia Journalism Review* (March/April, 1976), pp. 32ff. See also, E. M. Kennedy, "Fuel price decontrol is a mistake," *Challenge* (May-June, 1979), pp. 59-60.
- 13 Scapegoating is not limited to members of the general public. See J. Reston, "Who's to blame?" *New York Times* (May 13, 1979), p. E21, and a letter in response from W. D. Burnham published in the *Times* (May 23, 1979), p. A26.
- 14 Consider the following by J. S. Milstein, "How Consumers Feel About Energy: Attitudes and Behavior During the Winter and Spring of 1976-77" (U.S. Department of Energy, June, 1977), p. 11:
 People do not want to pay higher prices for energy because higher energy prices are *the* problem to a majority of people. Higher energy prices are of great concern to people because they are personally experienced weekly and monthly through gasoline and utility bills. Thus people are baffled by proposals to solve the energy problem by *raising* energy prices to consumers: How can you solve high prices by making them even higher?
- 15 More precisely, the problem is symbol inflation. In parallel with monetary inflation, it is a case of too many words and numbers chasing too few verifiable meanings from the viewpoint of the "buyer." The effect is to render ineffective the principal instrument of policy in the short run, the manipulation of symbols. Compare Mrs. A's comments on the "boy crying wolf."
- 16 Strategy is used here in the sense of A. M. Rivlin: A general principle which, if widely accepted, provides a stable and constructive context for the consideration of specific plans designed to implement it. See "Social Policy: Alternative Strategies for the Federal Government" (W. S. Woytinsky Lecture No. 3, Institute of Public Policy Studies and Department of Economics, The University of Michigan, 1973).
- 17 A small number of communities around the country already have achieved remarkable results through local energy initiatives with very little national publicity. See the *Hearings on Local Energy Policies*, May 22, June 5 and 9, 1978, of the Energy and Power Subcommittee, under Chairman J. D. Dingell, Committee on Interstate and Foreign Commerce, U.S. House of Representatives (Serial No. 95-135). An analysis of the hearings and other sources can be found in R. D. Brunner (1980), "Decentralized Energy Policies," *Public Policy* 28: 71-91.