

# Patterns of Participation: Investigating the Relationship Between “Conventional” and “Unconventional” Political Engagement

## Abstract

Research into political engagement is currently divided into two literatures: research on “conventional” and “unconventional” participation (Milbrath, 1965; McFarland and Thomas, 1996; Goldstone, 2003; Heaney and Rohas, 2006). Downward trends in “conventional” political engagement have been attributed to staff-run advocacy organizations that encourage members to contribute money but not engage otherwise (Skocpol and Fiorina, 1999; Fisher, 2006), and a decrease in civic participation overall (Putnam, 2000). In documenting the rise of social movements, researchers note spillover into domestic political participation with a surge in national protests or “unconventional” participation (Finkel and Opp, 1991; Putnam, 2000; Schussman and Soule, 2005). In this paper, I explore whether the simultaneous increase in protest and decrease in conventional participation changes the patterns in which Americans participate in politics. By examining conventional political engagement in the light of protest activities, I demonstrate that protest fits neatly into an entailment model of political participation. The method is based on extraction of patterns of participation, conditioning on the marginal participation in political activities. The findings show that the patterns of engagement of protesters have changed from 1976 to 2000, 2004, and 2008, with protest becoming more normalized over time but the other relationships remaining constant.

## Introduction

Research into political engagement is currently divided into two literatures: research on “conventional” and “unconventional” participation (Milbrath, 1965; McFarland and Thomas, 1996; Goldstone, 2003; Heaney and Rohas, 2006). In the United States, conventional activities consist of engagement in the electoral system through voting for political candidates and supporting their campaigns by attending rallies, donating money, volunteering, etc. The adjective “unconventional” is used to distinguish protest and other activities that are outside of the two-party system or “extra-institutional” (Meyer and Tarrow, 1998). In work on “conventional” political activity, scholars have documented a downward trend in participation levels (Conway, 2000). There are various explanations for this change. Some researchers cite a shift to staff-run advocacy organizations reliant on memberships who contribute money but do not engage otherwise (Skocpol and Fiorina, 1999; Fisher, 2006; Marien et al., 2010), others tying the trend to a decrease in civic participation overall (Putnam, 2000). Researchers into “unconventional” political activity have recorded a shift in the opposite direction (Klingemann and Fuchs, 1995; Norris et al., 2005; Finkel and Opp, 1991; Putnam, 2000; Schussman and Soule, 2005). In this paper, I explore whether the simultaneous increases in protest and decreases in other forms of participation have changed the patterns of American political engagement.

Protesters are generally thought to be different from those who participate

in conventional political engagement: those who protest do not engage in the conventional activities of voting, donating money, etc. and vice versa (Milbrath, 1965; Finkel and Opp, 1991; Beyerlein and Hipp, 2006). Some current research asserts that there is a relationship between protest and “conventional” participation (Norris et al., 2005; Schussman and Soule, 2005). This paper extends this new line of research that combines the formerly separate traditions by looking at the relationships between engaging in protest and participation in “conventional” activities based on patterns of individuals’ participation. Understanding shifts in the relationship between so-called “conventional” and “unconventional” activities reveals how the landscape of American political engagement has changed. In addition, I show that for some years of the survey, protest is structurally equivalent to other modes of engagement. Therefore, protest can fit into the standard paradigm that has characterized American political participation. By considering protest in conjunction with conventional forms of engagement, I empirically test scholars’ assertion that protest is becoming more normalized over time. This is inherently an argument about the relationship between protest and other forms of activities, not the individual rates of participation. The compilation of time-series cross-sectional surveys further confirms many scholars’ impressions that protest is indeed becoming more of a normalized mode of engagement.

Research on both conventional and unconventional engagement has shown that participation can be ordered along a linear scale of involvement from

most to least extreme. This form of modeling behavior was pioneered by Guttman's work on cultural traits (1944), and these types of scales are named for him (Milbrath, 1965; Barnes and Kaase, 1979; Crozat, 1998). Guttman scales are a total ordering, meaning that for each pair of variables,  $x$  and  $y$ ,  $x$  is either more or less extreme than  $y$ . Total orderings are antisymmetric, meaning that  $x$  cannot be both more and less extreme than  $y$ , and transitive, meaning that if  $x$  is less extreme than  $y$ , and  $y$  is less extreme than  $z$ ,  $x$  must be less extreme than  $z$ . Thus, Guttman scales are a one dimensional ranking of items from most to least extreme. It is referred to as a linear scale because all the items can be sorted along one dimension (or line, hence linear). The power of a Guttman scale is in the simplicity with which it encapsulates behavior within a system. By knowing the most extreme activity a given individual participates in, their entire behavior profile is known.

In "Political Participation: How and Why Do People Get Involved in Politics?" Lester Milbrath posits such a model, shown in Figure 1, for political participation (Milbrath, 1965). The activities are ordered from those that are most basic (lower) to the most extreme (higher). If an individual participates in one activity in a Guttman scale, he or she also participates in every activity lower on the scale. Milbrath's method has been replicated on other data with similar results (Barnes and Kaase, 1979). Barnes and Kaase also found that a linear scale fit Americans' participation in a variety of protest activities, but not when these activities were combined with the other activities Milbrath studied. They considered this to be a limitation of

the Guttman scale method because failure to find a Guttman scale rules out only that all the activities formed a linear ordering, but does not make claims about how the behaviors might actually be related (Barnes and Kaase, 1979). The method I will apply, *entailment analysis*, addresses this limitation. By relaxing the linear condition of Guttman scaling and introducing a set of possible relationships, the relationships between all types of political activity can be extracted and the resulting configurations can be compared.



Figure 1: Milbrath's Model

The contribution of this paper is larger than the methodological advances. Partial scales and general entailment structures have received much attention

in the methodological literature (Coombs, 1964; Mokken, 1971; Guttman, 1972; Bart and Krus, 1973; Coombs and Smith, 1973; Grofman and Hyman, 1973, 1974; D’Andrade, 1976; White et al., 1977; Shye, 1985; White and McCann, 1988; Wiley and Martin, 1999; Butts and Hilgeman, 2003), but the significance of the relational approach to data analysis remains unrecognized and underutilized in empirical research. Fundamentally, Milbrath and others’ findings that political participation constitutes a Guttman scale, at least in the United States, demonstrates that the patterns in which Americans participate demonstrate strong relationships between the different activities. Changes in the frequency of participation in each activity can occur without changing these relationships. However, current research suggests that these relationships are changing without using a relational framework. By forcing the methods to examine the relationship between activities, based on individual co-association, we construct a framework in which such change can be observed, measured, and tested. This framework is thus instrumental in appropriately hypothesizing and testing current theories of political engagement.

## Methodology

Entailment analysis is a statistical method that is used to examine data for relations between the different participation actions. Development of entailment network analysis stems from a long tradition of latent structure

models in the social sciences (Jackson and Borgatta, 1981). These models all examine data for repeated patterns in the presence of multiple variables in respondents' answers. An entailment analysis will return all logical implications and exclusions for each pair of binary variables. A strict implication,  $x \rightarrow y$  (also referred to as entailment), is considered to apply if a subject submits a positive response to question  $x$ , he or she also gives a positive response for  $y$ . Exclusion ( $\leftarrow \neg \rightarrow$ ) can be expressed as “ $x$  only if not  $y$ ,” and finally coexhaustion ( $\leftarrow e \rightarrow$ ) as “at least  $x$  or  $y$ .” In Milbrath's model, if a subject holds a public office, they have been a candidate for public office. If they have been a candidate for public office, they have solicited funds, and so on down the hierarchy (Milbrath, 1965). When all these strict implications hold for every individual's responses, a perfect Guttman scale results. An example of extracting an entailment relationship from data is shown in Figure 2. The survey results, shown on the left-hand side, are tabled in the middle of the figure. The zero in the upper-right-hand corner is the critical entry showing that no respondent who answered positively to  $A$  answered negatively to  $B$ , so the data supports the implicative relationship of “if  $A \rightarrow$  then  $B$ .” Zeros in the other cells would correspond to different propositional relationships, as shown in Figure 3.

In many empirical applications, we might not find zero individuals whose response patterns are contrary to the entailment relationship as depicted in Figure 2. If we had a population of hundreds, instead of the nine shown in Figure 2, we would conclude that an entailment relationship held even if

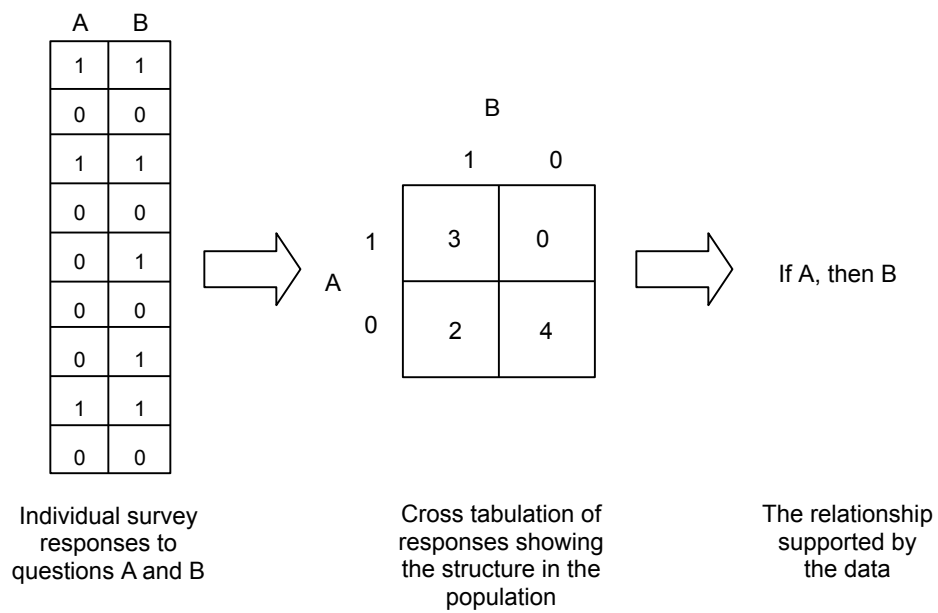


Figure 2: Extraction of an Entailment Relationship From Data



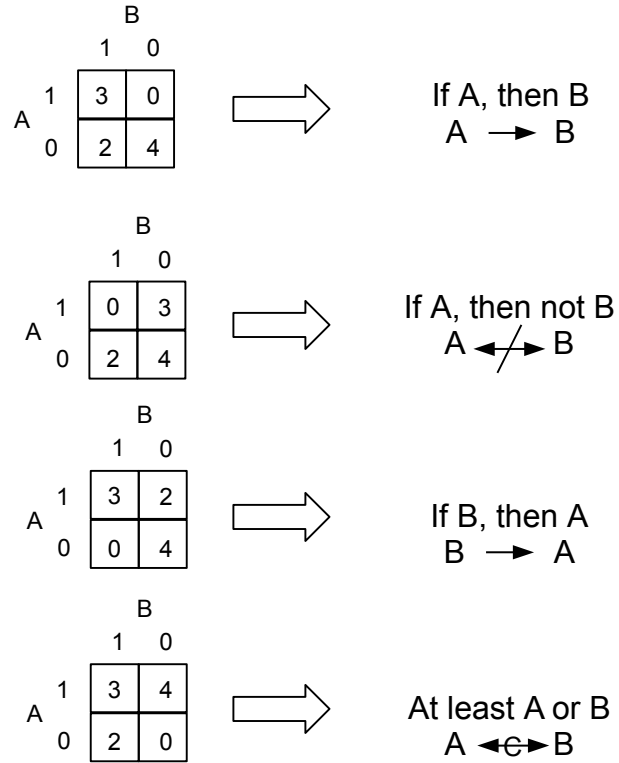


Figure 3: Different Entailment Relationships

one or two individuals violated. Statistics provides principled ways of loosening the strict criterion of total compliance by replacing it with calculated thresholds. Then, the entailment returns all relationships operating at or below the given level. The simplest such threshold is a raw error rate,  $e$ , such that the relationship  $x \rightarrow y$  holds if at least all the individuals who responded positively to  $x$ , minus  $e$ , also responded positively to  $y$ . Therefore the entailment analysis can be tuned to the strict degree of the researcher's choosing. A more sophisticated error rate would normalize the raw error,  $e$ , by the total population, thus permitting the comparison of error rates across different size populations. What will be used in this paper is a one-sided exact binomial test. For the example  $x \rightarrow y$ , the number of successes is the number of responses that are both positive for  $x$  and  $y$ , the number of failures is the number of responses that are positive for  $x$  but not  $y$ , and the probability of success is the marginal probability of a positive response for  $y$  divided by the total. This test provides a threshold for "if  $A \rightarrow$  then  $B$ " conditioning on the row and column marginals, or the percentage of respondents who answered positively to each variable. This will allow us to compare more popular variables, (Voting), to less popular activities (Protest). The one-sided binomial test produces a number between 0 and 1 and can be interpreted as any other statistical  $p$ -value. For the entailment analysis of each year, an overall threshold of 0.05 was set for the entire structure. As we are comparing 8 different activities, and entailment analysis test both whether variable  $x \rightarrow y$  and  $y \rightarrow x$ , the number of significance tests run to produce

the entire structure is the same as the number of possible edges in a directed graph. The formula is given in equation 1.

$$\frac{n!}{(n-2)!} = n(n-1) \quad (1)$$

Thus, for 7 vertices, 42 different significance tests were run and a multiple test correction was implemented in order to keep an overall threshold of 0.05 significance. As a result, only entailment relations significant at the level of .000915 are considered in the results. All results were calculated with the LDSA package for **R**, “Tools for Latent Discrete Structure Analysis” (Butts, 2005).

After the entailment relations are extracted, the results must be refined to be more easily interpreted. This process is described on a simplified example in Figure 4. Part I shows the 12 relations between the 4 variables  $A, B, C, D$ . The numbers besides each arrow represent empirical  $p$ -values from the one-sided exact binomial test. Once all the entailment relations are calculated, edges are removed to make the final structure more interpretable. These are removed in a specific order, which is demonstrated in parts II and III. In part II, any relationship that was not significantly strong, with a  $p$ -value greater than the established threshold, is removed. In part III, redundant and weaker entailment relations are removed to leave a simpler structure. White (2000) provides rules for eliminating weaker entailment relations to ensure the strongest transitivity ordering of the variables revealing any hierarchi-

cal structure of participation. Finally, redundant edges are removed. Since strong transitivity has been preserved, the edge in part II that shows those who perform activity  $D$  also perform activity  $A$  is redundant because that must be true given the two paths from  $D$  to  $A$  through  $B$  and  $C$ . Thus, the image in part II can be simplified to that in part III with the same meaning, since by removing those transitive relations that were not strong, we have ensured the relation from  $D$  to  $A$  by the remaining edges. Finally, part IV of Figure 4 shows the stylized image in a reduced form that will be used to convey the results. This template ensures that the ordering of the variables is visually salient. Most important, as this example shows, entailment analysis does not necessarily find a total ordering. The results in part IV are, in fact, not a linear scale, and as such this method is the appropriate test for the hypotheses posed in this paper.

## Data

The data for this study come from the American National Elections Survey. This survey was chosen from the various political engagement surveys because the activities asked about matched Milbrath's original variables. Additionally, as this survey has been given for more than 50 years, response patterns can be tracked over time. The years 1976, 2000, 2004, and 2008, were chosen because they are the only years in the survey in which respondents were asked if they had taken part in a protest or march in the preceding

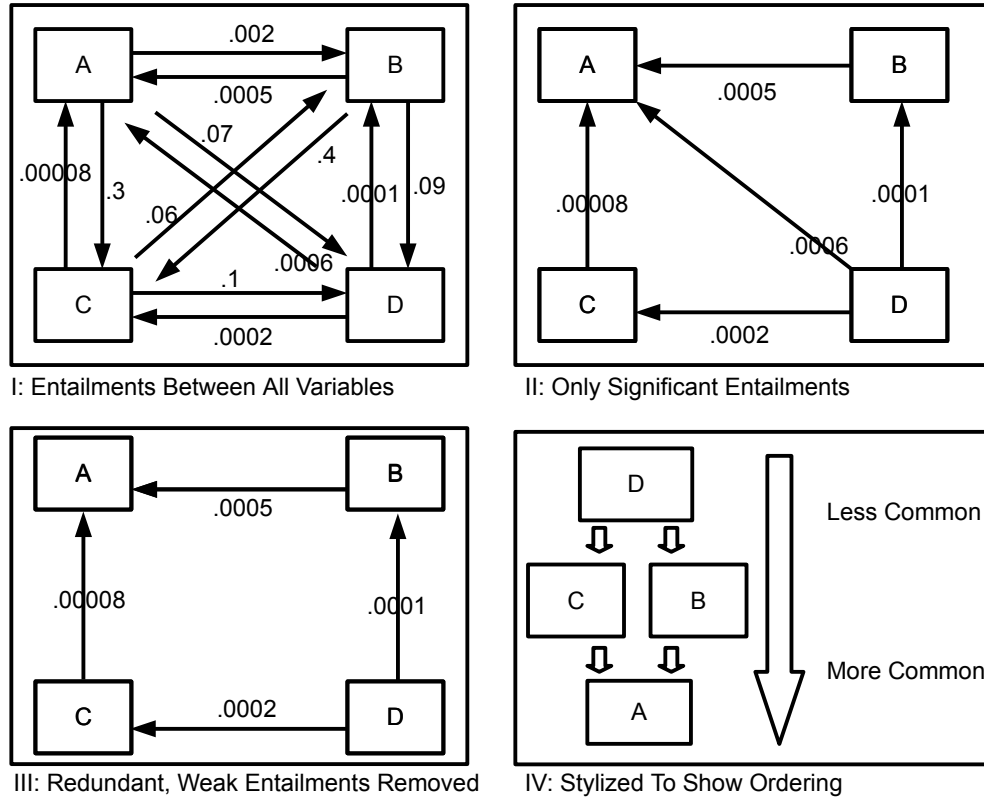


Figure 4: Illustration of Entailment Methodology

year. Eight variables (voting, initiating a political discussion, attempting to talk another into voting a certain way, wearing a button or putting a sticker on one's car, making a monetary contribution to a campaign, attending a political meeting or rally, contributing time to a campaign, and protesting) were used to test the hypotheses of this paper. Other related variables from Milbrath's model, (holding public office, being a candidate for office, soliciting political funds, attending a caucus or a strategy meeting, contacting a public official, and being an active member in a political party), were ignored be-

cause they were not included in the questionnaires at any time period (Miller et al., 1999; American National Election Studies, 2000, 2004, 2008).

## Hypotheses

Milbrath’s model makes specific claims about the relationships between political engagement activities. The first is that the activities, aside from protest, fall on a linear, one-dimensional scale. Many other possible configurations exist: the activities could be unrelated, or they could be related to each other in any nonlinear configuration. Secondly, the activities could fall on a linear scale, but the ordering of the variables could differ from the order in Figure 1 proposed by Milbrath. Thus, we have hypotheses **(1a)** and **(1b)**:

**Hypothesis 1.** *The entailment analysis of participation activities will confirm Milbrath’s hypothesis because*

- (a) *The activities, except for protest, fall on a one-dimensional, linear Guttman scale.*
- (b) *The ordering of participation activities follows the pattern Milbrath predicted.*

One of the benefits of viewing entailment analysis within a network perspective is that we can illustrate these hypotheses in terms of the networks of relations between different activities. Figures 5 and 6 show illustrations of such networks for hypotheses **(1a)** and **(1b)**.

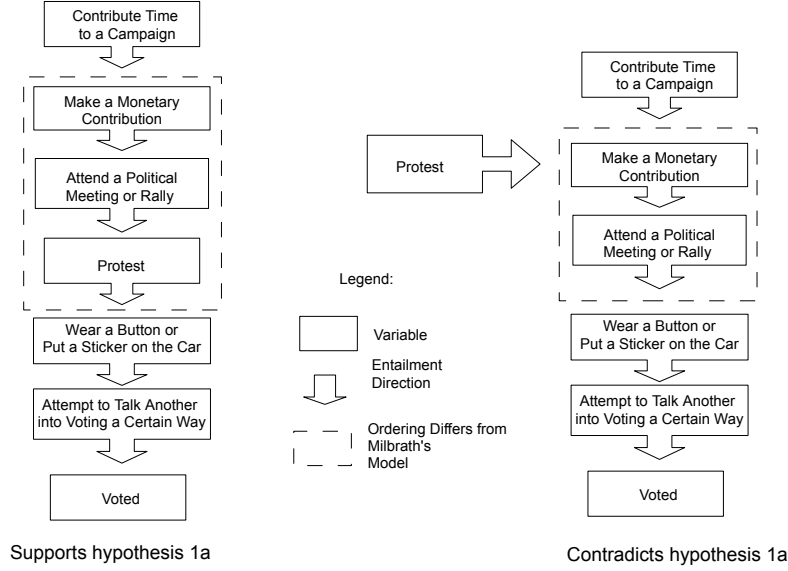


Figure 5: Illustration of Hypothesis (1a)

In Figure 5, the left hand side shows a Guttman scale. Each item either entails or is entailed by the remaining items. The right hand side, however, violates the condition of a one-dimensional, linear ordering because there is no entailment relationship between Protest and Time. Many additional configurations, in fact anything other than a single path linking all the variables, would also violate hypothesis 1a. The concern of part (a), whether a linear scale does exist, has been a problem with applying Guttman scale models because the previous methods of testing only determine whether activities fit the linear ordering or not (Barnes and Kaase, 1979). Foreshadowing the results, entailment analysis is appropriate for these systems because the method

will test for additional structures and relationships between political participation activities besides a linear scale.

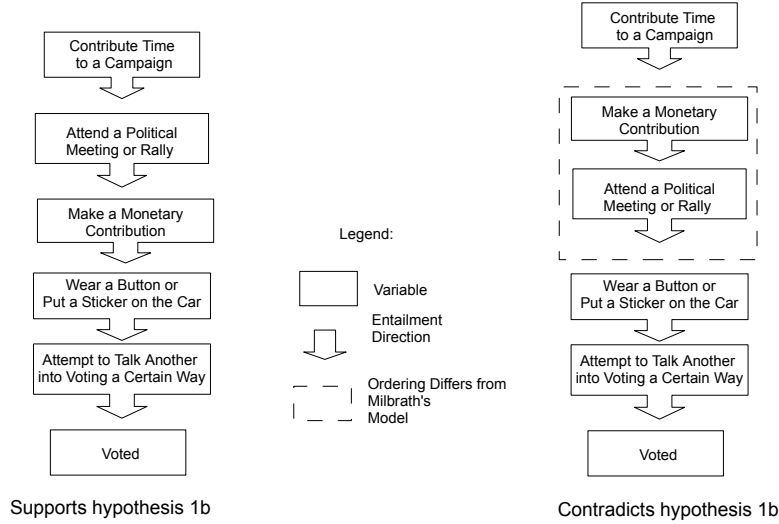


Figure 6: Illustration of Hypothesis (1b)

In Figure 6, what is of interest is the ordering of the variables. Change in this ordering would show that some activities are increasing\decreasing in prominence and becoming more\less basic forms of engagement. The left side shows Milbrath's ordering, minus protest. The right has some of the items, Make a Monetary Contribution and Attend a Political Meeting or Rally, in a different order. Parts (a) and (b) together compare entailment analysis to the results from previous Guttman scaling analysis of political participation. A result that concurs with those of previous researchers will add credence to



the use of the method and support the following more elaborate tests.

Milbrath argues that protest as a form of political engagement simply is not related to the other activities in his Guttman scale of more conventional engagement. Many authors have accepted this position (Marsh, 1977; Muller, 1979; Conway, 2000) in later work and have focused solely on the more conventional participatory actions of voting and campaigning – the activities listed in Milbrath’s analysis in Figure 1. If protest has no relationship to the linear scale of conventional activities, the entailment structure indicates that people who engage in protest participate in politics in a way entirely different from non-protesters: non-protesters conform to the Guttman scale of behavior, but those who engage in protest do not. However, previous studies did not find the absence of any relationship, but failed only to find the relationship specified by a Guttman scale. By using entailment analysis, this work examines what kind of relationship exists between the protest and other engagement activities without any initial assumptions of what the structure should look like.

Where previous scholarship often considered protesters to be a small, strange minority, there is evidence that the landscape of American political engagement has changed. At the beginning of the 21st century, the number of US citizens engaging through political protest is increasing (Norris, 2002; Putnam, 2000). However, in the majority of research on protest participation samples consist only of individuals already committed to a social movement which makes it impossible to compare the patterns of engagement over Mil-

brath’s items of conventional engagement between protesters and Americans who do not protest (Beyerlein and Hipp, 2006). Some more recent empirical work hints at an association between protest and conventional activities (Bean, 1991). In reexamining the American Citizen Participation Survey data of Verba and Nie (1972), Schussman and Soule (2005) find some support for reevaluating protesters in light of the full range of activities in the political participation repertoire. They conclude that “voting and protest are complementary forms of political expression, rather than conflicting or alternate forms,” but note that this result is contrary to much of the previous literature. One explanation could be that previous authors missed this trend, but a more likely possibility is that the patterns of protest behavior are changing (Norris et al., 2005). Thus, we have the second hypothesis:

**Hypothesis 2.** *Protest has significant propositional ties to the other engagement activities.*

While this hypothesis does not make predictions about what those ties are, it is a direct test of Milbrath’s claim. The third hypothesis tests predictions about dynamic change within the system:

**Hypothesis 3.** *Protest becomes more normalized over time*

The term “normalization” can capture a variety of dynamics. Using propositional structures, I define it as two separate processes. According to Milbrath, protest is completely unpredictable, meaning that there is no propositional

relationship between protest and any other activity. Any propositional relationships between protest and the other activities therefore represent an increase in normalization because those who protest also engage in the other activities in predictable ways. Thus, the first process of normalization is the increase in the number of propositional ties, indicating the increasing presence of participatory norms.

- (a) *Protest becomes more normalized over time by increasing its degree (number of ties) in the propositional network*

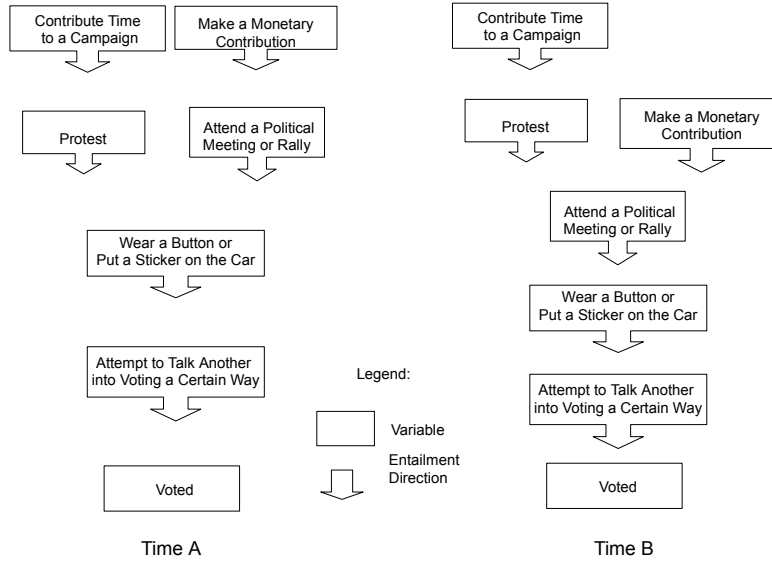


Figure 7: Illustration of Hypothesis **3a**

Figure 7 shows a possible set of configurations that would support Hypothesis **3a**. At Time A (the left hand side), Protest is entailed by Contributing Time,

and entails Wearing a Button, Attempting to Talk Another into Voting a Certain Way, and Voted – a total degree of 4. At Time B (the right hand side), the degree of Protest has increased by 1 as it now also entails Attending a Political Meeting or Rally. Thus, there is an increase in the normalization of Protest from Time A because those who participate in Protest also reliably participate in an additional activity in Time B.

Two separate process can increase the degree: if protest entails other activities, or other activities entail protest. If the incoming ties increase, protest becomes a less extreme activity and therefore is more accepted and “normalized” in a different sense – more basic or common – leading to an alternative structure and Hypothesis **3b**:

- (b) *Protest becomes more normalized over time by having a greater incoming ties and thus becoming a less extreme event in a propositional hierarchy*

Figure 8 displays two Guttman scales where Protest has a higher in-degree at time B (the right hand side) than time A. In this example, unlike in Figure 7, the total number of propositional ties remains constant. Additionally, the entire propositional structure does not need to conform to a Guttman scale model to measure either of these forms of normalization.

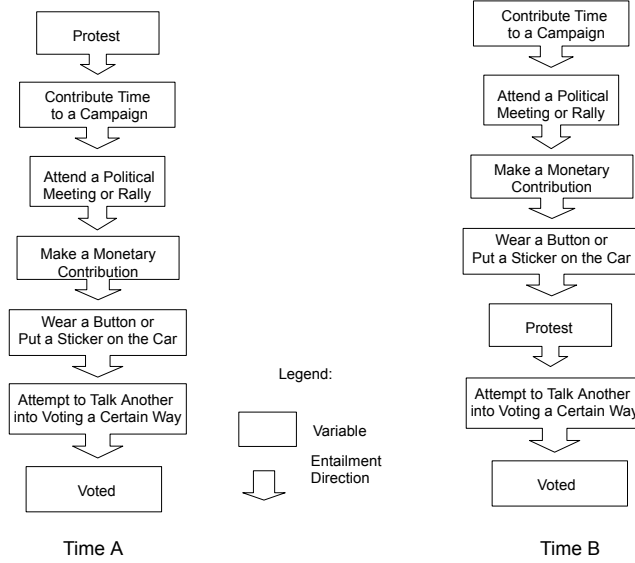


Figure 8: Illustration of Hypothesis **3b**

## Results

Frequency distributions for all four years of data are presented in Figure 9. For the most part, the participatory actions are ordered according to Milbrath's model. Voting and talking with someone about how to vote (the purple and blue lines), are clearly significantly different from the other activities. In 1972, donating time, attending a rally, donating money, and wearing a button are all statistically indistinguishable, but protest is at an even lower rate of participation (less than 2%). By 2008, however, 15% of respondents claimed to have participated in protest activities. By frequency alone, more of the population is engaging in protest. The purpose of the

entailment analysis is to see if the relationships between the activities, based on which respondents are engaged in which activities, will confirm Milbrath's model.

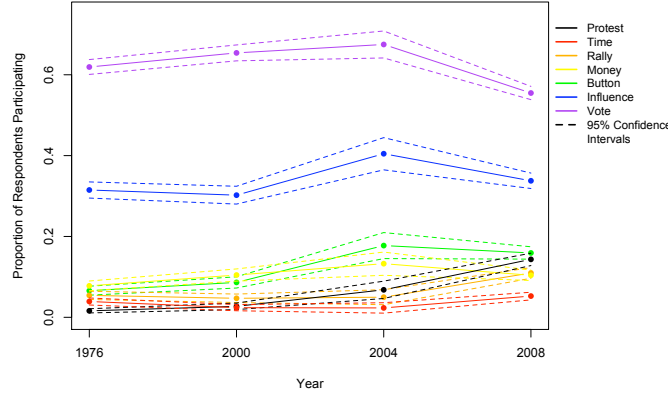


Figure 9: Frequency of Participation by Activity and Year

We start with the earliest year, the closest to the time of Milbrath's writing, and proceed forward. Table 1 of the Appendix contains the  $p$ -values from the exact binomial test. Figure 10 shows the stylized entailment result drawn from the  $p$ -values in Table 1.

Figure 10 shows an almost linear structure, approximating a Guttman continuum, for the questions concerning political participation. As in Figure 1, those who participate in actions located higher on the scale participate in all lower actions that have connecting arrows. Each arrow is significant at the .000915 level, resulting in an error rate of 0.05 for the entire structure. Figure 10 shows that patterns of participation in 1976 resemble Milbrath's

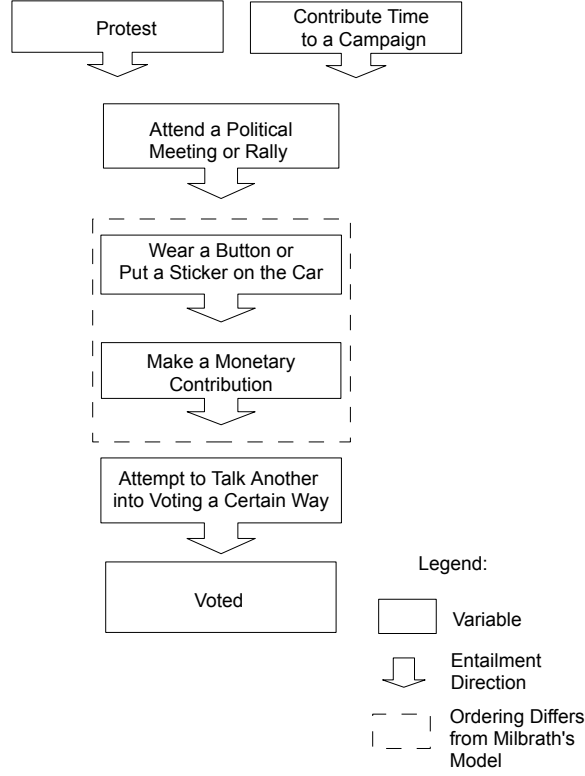


Figure 10: Stylized Entailment Network for Significant Relationships in 1976

model, but with some noticeable distinctions. First, if we exclude protest as is done in the literature on conventional engagement, then the figure would show a perfect Guttman continuum from contributing time to voting, thus supporting hypothesis **(1a)**. The activities are ranked in almost the same ordering as Milbrath placed them, therefore failing to support hypothesis **(1b)** because the activities of donating money and wearing a button are reversed. Turning to the second hypothesis, Protest is structurally equivalent

to Contributing Time to a Campaign. Both activities entail all the remaining activities. This finding supports hypothesis **(2)**. With only this data, we can conditionally accept both hypotheses **(1a)** and **(2)** with reservations about **(1b)**. Milbrath was mostly correct with his initial modeling of political participation. Entailment analysis could have produced a dense network of relationships between each activity or none, but instead the structure produced is almost a Guttman scale. The resulting ordering bears some relation to that predicted by Milbrath, but with some exceptions. Contrary to Milbrath’s hypothesis, those who protest also participate in the “conventional” activities. Although it is an uncommon activity in the sample (as shown by its presence at the top of the figure), protesting is structurally equivalent to working for a campaign as a level of engagement. Both those who work for campaigns and those who protest engage in all of the lower activities in the figure at enhanced rates ( $p < 0.05$ ). To evaluate hypothesis **(3)**, we turn to the entailment results for 2000, 2004 and 2008.

Figure 11 shows the stylized image of the entailment structure for 2000 derived from the  $p$ -values in Table 2. Protest has changed its position, but otherwise the ordering of the activities is exactly the same as for 1976. The differences from Milbrath’s model are maintained in the empirical data, with donating money and wearing a button switched. The consistency of this configuration over time provides even greater support for revising Milbrath’s ordering of participation, in contrast to hypothesis **(1b)**. Much of the ordering is similar, supporting Milbrath’s ordering, but these deviations are



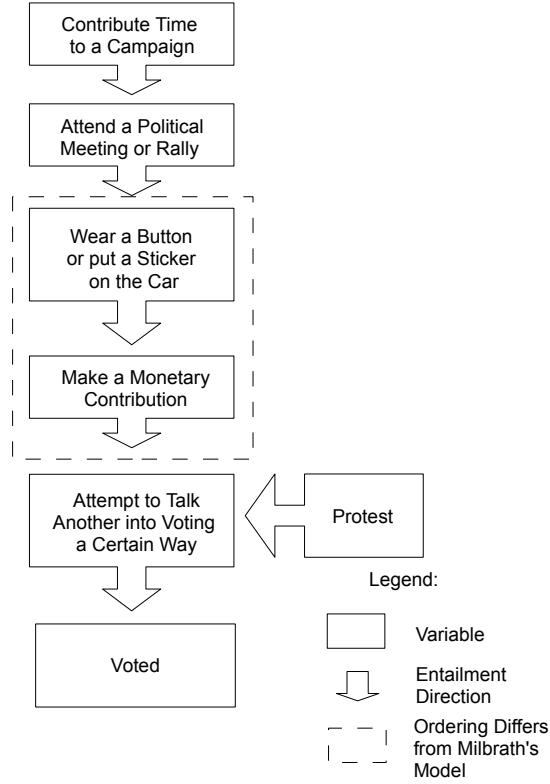


Figure 11: Stylized Entailment Network for Significant Relationships in 2000

consistent over each year, indicating that perhaps individuals perceive these activities differently than Milbrath concluded. Protest again does not fit into the linear continuum, and here has moved even further down the scale. Whereas in 1976 protesters were not significantly likely to also donate time, but were likely to participate in every other activity, in 2000 protesters are only significantly likely to also attempt to talk another into voting a certain way and vote themselves. While protesters and non-protesters have the 3

most basic forms of participation in common, non-protesters who engage in the less common forms of activity have much less of their participation pattern in common with protesters than in 1976 where 5 activities were shared. While protest was rarer than even the less common forms of conventional political participation in 1976, protesters still engaged in the less common forms of conventional participation in addition to their protest activities. In 2000, this pattern no longer holds, and protesters have stopped participating in the less common forms of political participation in the same patterns as non-protesters, but still maintain the 3 most common forms in the same ordering. The results from 2000 have helped to confirm the results from 1976 for hypotheses (1) and (2). The ordering of participation is linear except for protest. The ordering is also like Milbrath's in respect to most of the rankings, but with differences that are resilient over time. Finally, the relationship of protesters to the other participation activities has changed over time, supporting hypothesis (3).

Figure 12 shows the stylized results for 2004 and the exact  $p$ -values are found in Table 3. These results are the same as those for 2000 except for two variables: attempt to talk another into voting a certain way and donating money have switched positions. Protesters remain constant at only sharing the 3 most common forms of activities in the pattern with non-protesters. As concluded from the 2000 dataset, hypothesis 3, that the relationship between protest and conventional engagement has changed over time, is confirmed.

The data for 2008 are displayed in Figure 13 and Table 4. All the activ-

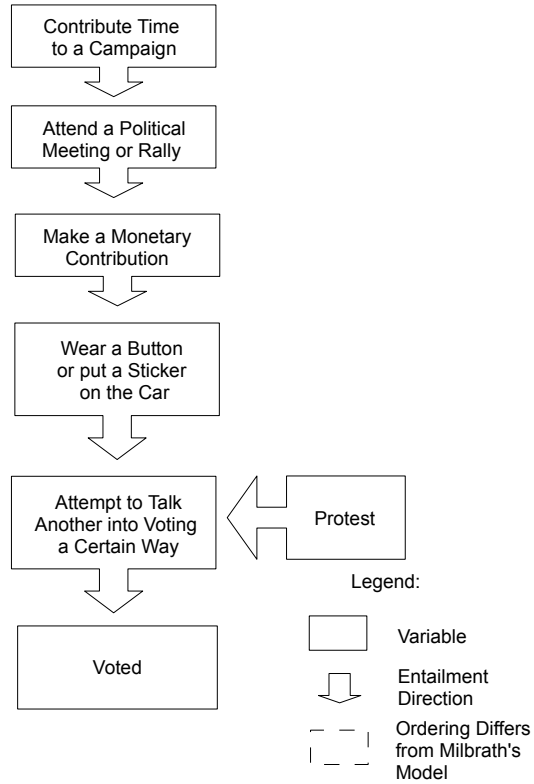


Figure 12: Stylized Entailment Network for Significant Relationships in 2004

ities, including protest, now form a linear Guttman scale. However, unlike in 1976 and Milbrath's predictions, protest is much further down the scale. What is evident from these four years of data is that protest has become more normalized and integrated into a one-dimensional representation of American political engagement.

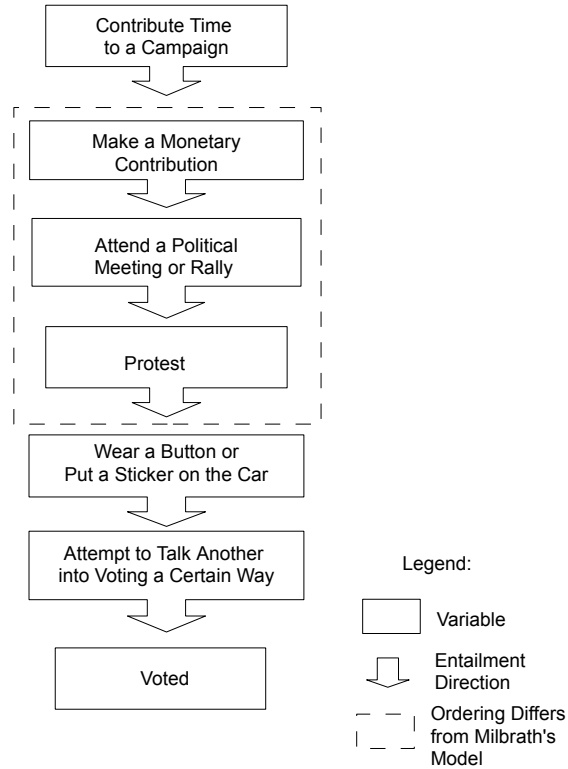


Figure 13: Stylized Entailment Network for Significant Relationships in 2008

## Discussion

From the analysis, two important conclusions can be drawn: first, even in 1976 protest was not completely unrelated to the other activities. While its inclusion in the system could not be modeled with a Guttman scale, the advantage of entailment analysis is that the relations between engagement activities can still be analyzed even though they do not form a Guttman scale. First, contrary to Milbrath's hypothesis, protesters in 1976 did fit within the

same paradigm of all other political participants. Protest simply represented a more extreme form of political participation equivalent to donating time to a campaign. The relationship between protest and the other forms of engagement changes drastically from 1976 to 2000. In 2000 and 2004, if a respondent had attended a protest, then he or she probably also voted, but had no significant relationship with any other activity. In 2008, the structure changed again with protest falling into a Guttman scale between attending a meeting or rally and wearing a button. Thus, this methodology has provided a platform for understanding how protesters fit the conventional model of political participation. Additional research involving simulation and more time points would certainly help to solidify the importance of these changes. Does the incorporation of protest into a Guttman scale represent the culmination of a period of protest normalization, or was 2008 an aberration? Future research should examine the differences between those individuals who fall off at each step of Milbrath's model. Can we detect differences between those who vote, but do not discuss politics, those who discuss politics but do not try to convince someone else to vote a certain way, etc. Do men and women have different patterns of participation? Do these patterns differ over racial, income, or educational lines? Entailment analysis can help answer these and more questions.

## Appendix

This section includes the tables of  $p$ -values for each year of data presented in temporal ordering.

	Protest	Contribute Time to a Campaign	Attend a Political Meeting	Donate Money	Button	Attempt to Convince Another How To Vote	Vote
Protest		0.45	0	0.01	0.4	0	0.17
Contribute Time to a Campaign	0.45		1.6E-24	5.6E-25	1.5E-24	1.8E-20	5.2E-9
Attend a Political Meeting	0	2.4E-23		3.5E-24	7.7E-18	1.5E-11	1.4E-9
Donate Money	0.01	2.8E-22	1E-22		1.6E-13	1.1E-17	9.1E-12
Button	0.05	1.2E-22	2.3E-17	7.8E-14		7.7E-17	1.7E-9
Attempt to Convince Another How to Vote	0	4.5E-11	2.1E-7	3.1E-11	1.9E-10		1.5E-17
Vote	0.3	0.01	0	0	0	1.4E-7	

Table 1:  $P$ -values for 1976

	Protest	Contribute Time to a Campaign	Attend a Political Meeting	Donate Money	Button	Attempt to Convince Another How To Vote	Vote
Protest		1	0.05	0.22	0.22	0	0
Contribute Time to a Campaign	1		3.1E-12	2.6E-17	1.1E-14	3E-8	0
Attend a Political Meeting	0.5	1.8E-11		1.2E-10	2.6E-17	2.6E-13	4.4E-5
Donate Money	0.01	3.8E-7	1.4E-11		1.2E-10	1.2E-11	2.2E-9
Button	0.22	1.9E-12	9.3E-16	5.7E-11		3.1E-16	2.6E-8
Attempt to Convince Another How to Vote	0	3.4E-5	2.9E-8	2.2E-8	8E-11		8.4E-9
Vote	0.12	0.09	0.04	0	0.01	0	

Table 2:  $P$ -values for 2000

	Protest	Contribute Time to a Campaign	Attend a Political Meeting	Donate Money	Button	Attempt to Convince Another How To Vote	Vote
Protest		1	0	0.04	0	0	0.01
Contribute Time to a Campaign	1		2.5E-7	3.7E-6	4.9E-6	0.02	0.03
Attend a Political Meeting	0	8.8E-7		1.4E-6	0	0	0
Donate Money	0.05	5.4E-5	1E-5		1.4E-8	4.7E-5	1.9E-5
Button	0	0	0	6.2E-8		6.6E-7	0
Attempt to Convince Another How to Vote	0.01	0.07	0.01	0	8.7E-5		1.7E-5
Vote	0.15	0.02	0.01	0.03	0.06	0.01	

Table 3:  $P$ -values for 2004

	Protest	Contribute Time to a Campaign	Attend a Political Meeting	Donate Money	Button	Attempt to Convince Another How To Vote	Vote
Protest		5.6E-10	1.4E-20	8.6E-17	9.5E-14	2.3E-15	4.4E-13
Contribute Time to a Campaign	1.7E-12		1.7E-42	1.3E-21	1E-23	1.7E-14	5.3E-5
Attend a Political Meeting	2.2E-24	5.2E-35		1.5E-23	2.2E-23	2E-14	1.9E-8
Donate Money	1E-18	3.7E-19	7.8E-24		6.8E-30	3.1E-19	1.3E-17
Button	1E-18	1.4E-18	3.1E-21	2.1E-26		2.4E-20	1.1E-17
Attempt to Convince Another How to Vote	1.4E-10	5.3E-8	4.6E-9	1.4E-11	1.6E-13		2.3E-15
Vote	0	0.04	0.01	0	3.1E-5	1E-6	

Table 4:  $P$ -values for 2008

## References

American National Election Studies. 2000. “The 2000 Time Series Study

Dataset.”

American National Election Studies. 2004. “The 2004 Time Series Study Dataset.”

American National Election Studies. 2008. “The 2004 Time Series Study Dataset.”

Barnes, Samuel and Max Kaase. 1979. *Political Action: Mass Participation in Five Western Democracies*. Beverly Hills and London: Sage Publications.

Bart, W. M. and D. J. Krus. 1973. “An Ordering-Theoretic Method to Determine Hierarchies Among Items.” *Educational and Psychological Measurement* 33.

Bean, Clive. 1991. “Participation and Political Protest: A Causal Model with Australian Evidence.” *Political Behavior* 13.

Beyerlein, Kraig and John R. Hipp. 2006. “A Two-Stage Model for a Two-Stage Process: How Biographical Availability Matters for Social Movement Mobilization.” *Mobilization* 11.

Butts, Carter. 2005. “Tools for Latent Discrete Structure Analysis.”

Butts, Carter and Christine Hilgeman. 2003. “Inferring Potential Memetic Structure from Cross-Sectional Data: An Application to American Religious Beliefs.” *Journal of Memetics* 7.

Conway, Margaret M. 2000. *Political Participation in the United States*. Washington, DC: Congressional Quarterly Press.

Coombs, C. H. 1964. *Theory of Data*. New York, New York: Wiley Press.

Coombs, C. H. and J. E. K. Smith. 1973. “On the detection of structure in attitudes and developmental processes.” *Psychological Review* 80.

Crozat, Matthew. 1998. “Are the Times A-Changin’? Assessing the Acceptance of Protest in Western Democracies.” In *The Social Movement Society*, edited by David S. Meyer and Sidney Tarrow. Oxford: Rowan & Littlefield Publishers, Inc.



- D'Andrade, R. G. 1976. "A Propositional Analysis of U.S. American Beliefs about Disease." In *Meaning in Anthropology*, edited by K. H. Basso and H. A. Selby. Albuquerque, New Mexico: University of New Mexico Press.
- Finkel, Steven and Karl-Dieter Opp. 1991. "Party Identification and Participation in Collective Political Action." *Journal of Politics* 53.
- Fisher, Dana. 2006. *Activism, Inc.: How the Outsourcing of Grassroots Campaigns is Strangling Progressive Politics in America*. Stanford, CA: Stanford University Press.
- Goldstone, Jack A. 2003. "Bridging Institutionalized and Noninstitutionalized Politics." In *States, Parties, and Social Movements*, edited by Jack A Goldstone. Stanford, CA: Stanford University Press.
- Grofman, Bernard and Gerald Hyman. 1973. "Probability and Logic in Belief Systems." *Theory and Decision* 4.
- Grofman, Bernard and Gerald Hyman. 1974. "The Logical Foundations of Ideology." *Behavioral Science* 19.
- Guttman, L. 1944. "A Basis for Scaling Quantitative Data." *American Sociological Review* 9.
- Guttman, L. 1972. "A partial-order scalogram classification of projective techniques." In *Psychopathology*, edited by M. Hammer, K. Salzinger, and S. Sutton. New York, New York: Wiley Press.
- Heaney, Michael and Fabio Rohas. 2006. "Partisans, Nonpartisans, and the Antiwar Movement in the United States." *American Politics Research* 35.
- Jackson, David J. and Edgar F. Borgatta (eds.). 1981. *Factor analysis and measurement in sociological research: a multi-dimensional perspective*. Beverly Hills and London: Sage Publications.
- Klingemann, Hans-Dieter and Dieter Fuchs. 1995. *Citizens and the State*. Oxford: Oxford University Press.
- Marien, Sofie, Mac Hooghe, and Ellen Quintelier. 2010. "Inequalities in Non-institutionalized Forms of Political Participation: A Multi-level Analysis of 25 Countries." *Political Studies* 58.

- Marsh, Alan. 1977. *Protest and Political Consciousness*. London: Sage.
- McFarland, Daniel and Reuben Thomas. 1996. "Bowling Young: How Youth Voluntary Associations Influence Adult Political Participation." *American Sociological Review* 71.
- Meyer, David S. and Sidney Tarrow. 1998. *The Social Movement Society*. Oxford: Rowman & Littlefield.
- Milbrath, LW. 1965. *Political Participation: How and Why do People Get Involved in Politics?* Chicago: Rand McNally.
- Miller, Warren E., Arthur H. Miller, and American National Election Studies. 1999. "National Election Studies, 1976: Pre/Post-Election Survey Dataset."
- Mokken, R. J. 1971. *A Theory and Procedure of Scale Analysis With Applications in Political Research*. Netherlands: Mouton & Co.
- Muller, Edward N. 1979. *Aggressive Political Participation*. Princeton, New Jersey: Princeton University Press.
- Norris, Pippa. 2002. *Democratic Phoenix: Reinventing Political Activism*. Cambridge, Massachusetts: Cambridge University Press.
- Norris, Pippa, Stefaan Walgrave, and Peter Van Aelst. 2005. "Who Demonstrates? Antistate Rebels, Conventional Participants, or Everyone?" *Comparative Politics* 37.
- Plutzer, Eric. 2002. "Becoming a Habitual Voter: Inertial, Resources and Growth in Young Adulthood." *American Political Science Review* 96.
- Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Touchstone.
- Schussman, Alan and Sarah A. Soule. 2005. "Process and Protest: Accounting for Individual Protest Participation." *Social Forces* 84.
- Shye, Samuel. 1985. *Multiple Scaling: The Theory and Application of Partial Order Scalogram Analysis*. Amsterdam: Elsevier Science Publishers.

- Skocpol, Theda and Morris P. Fiorina (eds.). 1999. *Civic Engagement in American Democracy*. Washington, DC: Brookings Institute Press.
- Verba, S. and N.H. Nie. 1972. *Participation In America*. New York: Harper & Row.
- White, Douglas R. 2000. "Manual For Statistical Entailment Analysis 2.0: Sea.Exe." *World Cultures* 11.
- White, Douglas R, Michael L. Burton, and Lilyan A. Brudner. 1977. "Entailment Theory and Method: A Cross-Cultural Analysis of the Sexual Division of Labor." *Behavior Science Research* 12.
- White, Douglas R. and H. Gilman McCann. 1988. "Cities and fights: material entailment analysis of the eighteenth-century chemical revolution." In *Social Structures: A Network Approach*, edited by Barry Wellman and S. D. Berkowitz. New York: Cambridge University Press.
- Wiley, James A. and John Levi Martin. 1999. "Algebraic Representations of Beliefs and Attitudes: Partial Order Models for Item Responses." *Sociological Methodology* 29.