Double Take: A Reexamination of Democracy and Autocracy in Modern Polities

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Double Take

A REEXAMINATION OF DEMOCRACY AND AUTOCRACY IN MODERN POLITIES

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The Polity data are widely used to explore the causes and consequences of democratic authority patterns. These data often have been used uncritically. The authors explore some of the theoretical and empirical characteristics of these data. They show how the analytical composition of the well-known democracy and autocracy scores is not upheld by an empirical analysis of the component measurements and demonstrate that democracy, as measured by the Polity indicators, is fundamentally a reflection of decisional constraints on the chief executive. The recruitment and participation dimensions are shown to be empirically extraneous despite their centrality in democratic theory. The authors conclude that it is a mistake to overlook the categorical nature of these data and that an analysis of the constituent authority patterns is likely to be fruitful for the democratic peace and democratization literature.

The study of the causes and consequences of democracy has reemerged as a central concern in the post-cold war era. As the contemporary era rides out Huntington's (1991) "third wave," it seems clear that larger portions of the world's population are living in societies with some aspects of democratic governance. There is an evident and important shift in the balance between authoritarian and democratic societies. Not just in Central Europe but around the globe in Asia, Africa, and the Americas, it is apparent that a democratizing change is afoot (Ray 1995; Gurr, Jaggers, and Moore 1990; Huntington 1991; Gastil 1987).

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In evaluating the causes of this wave of democratization, many have looked to several factors. Generally, these explanations emanate from the political economy. Free markets and economic prosperity are given pride of place in many analyses (e.g., Burkhart and Lewis-Beck 1994; Bollen and Jackman 1985; Przeworski, Alvarez, Cheibub, and Limongi 1996; Brown 1995; Lipset 1959, 1994). In looking at the consequences of democratization, stable democracies are thought to avoid wars against other stable democracies (e.g., Doyle, 1986; Russett 1993; Maoz and Russett 1993; Ray 1995). To be sure, the causal arrows have been reversed, and scholars have looked at authority patterns as a result of wars as well as at the prosperity that is brought about by democratic structures. The rebirth of interest in these questions clearly has been fostered by democratizing events in Central Europe.

Using the well-known Polity III data, the empirical trends in the growth of democracy and the so-called mean level of democracy are portrayed in Figure 1.[1] Huntington's three waves are clear in these displays, as is the explosion of democratization in the post-1989 period.

This study is not yet another catalog of the changes in the global terrain of democratic governance. Rather, we take as our point of departure the ways in which contemporary scholarship assesses democracy. As part of a larger undertaking to examine the spatial and temporal spread of democratic governance structures (Ward, O'Loughlin, Shin, Lofdahl, Gleditsch, and Cohen 1996), we focus on how to assess the democratic characteristics of states. Gurr et al. (1990, 106) noted that most secondary uses of the Polity (I, II, and III) data have taken the reliability as given. What is more important is that most secondary analyses of these data have taken the *analytical* construction of these data as given as well. We conduct a fairly extensive empirical examination of the characteristics of the Polity III data set because these data are widely used in scholarly literature. We explore the empirical consequences of the analytical construction of democracy and autocracy indexes using the authority characteristics of the Polity framework.

WHAT IS DEMOCRACY?

Mill, Rousseau, Madison, and many others developed, amplified, and embellished what has become pluralist democratic theory. Recent contemporary thought has focused on Dahl's (1983) delineation of a democratic ideal, encompassing not only equal access to ballots but also effective participation of a citizenry included in the decision-making process, armed with enlightened understanding of the issues and control of the agenda of decision processes. Schmitter and Karl (1993) pointed out that a democracy will offer a variety of channels through which competitive processes will be accessible, suggesting that democracies are multiple-path structures enabling participation to come in a variety of forms, for example. Diamond, Linz, and Lipset (1988) suggested that institutionalized, regular, and meaningful competitions in the

1. In this and subsequent figures, transitional polities are included, but polities that are not considered to be a member of the interstate system (e.g., Correlates of War non-system members) are excluded.

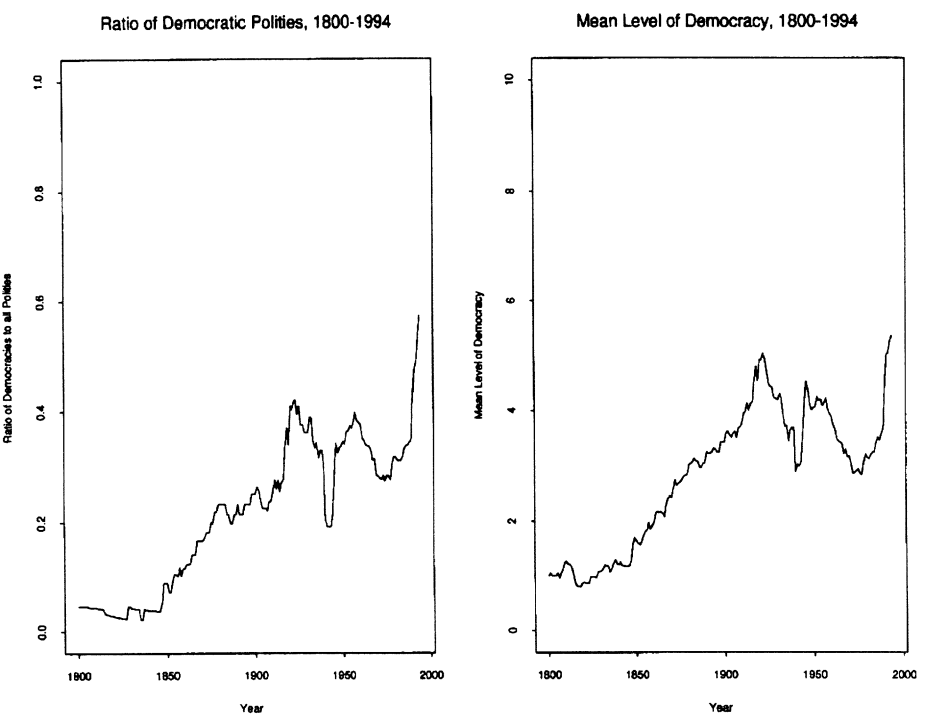


Figure 1: Waves of Democratization, 1800-1994

selection of leaders and in the determination of policymaking are hallmarks of modern democratic societies. Legal and effective protection of civil and political rights and freedoms has long stood as another lens through which to examine how democratic societies are. Best known within this *genre* is the annual survey of Freedom House, conducted until recently by Gastil (1987). Rummel's (1979, 1985) libertarian focus and Arat's (1991) work on democracy and human rights serve as additional examples. Following an approach to looking at the output of democracies, Ray (1995) proposed that back-to-back peaceful transfers of power characterize mature democracies. Earlier attempts to define democracy include those of Cutright (1963), Fitzgibbon (1967), and Banks (1972).

Many discussions of democracy have an ethnocentric flavor to them, casting groups of countries and millions of people into the "them" and "us" categories. The Polity data have provided an attractive alternative to the arbitrary character exhibited by other definitions. We leave to others a history of the Polity data (see Jaggers and Gurr [1995] and Gurr et al. [1990] for published descriptions). However, one of the major benefits of the Polity project has been largely left behind by its users; namely, it derives from an overall theory of authority relations. The cornerstone for this framework is spelled out in Eckstein (1969) and in Eckstein and Gurr's (1975) book, *Patterns of Authority:*

A Structural Basis for Political Inquiry. The framework initially was derived to examine the authority patterns that characterize any social units, including national political systems. This framework includes 12 basic dimensions that derive from a progressive differentiation of social relations. Authority patterns are seen to be "a set of asymmetric relations among hierarchically ordered members of a social unit that involves the direction of the unit" (p. 22).[2] Eckstein and Gurr argued that the study of politics should be equated with the study of authority relations.

The first use of the Eckstein and Gurr (1975) framework came with the analysis used in "Persistence and Change in Political Systems, 1800-1971" (Gurr 1974) and the publication of the Polity I data set. In that work, Gurr explores five dimensions: (1) the openness of recruitment to superordinate positions, (2) the extent of decision constraints on the superordinates, (3) the degree of subordinate participation via regular and open political competition and opposition, (4) the extent of directiveness or the degree of regulation of and sanctions over citizens' activities, and (5) the complexity and centralization of governmental decision-making structures.

Based on these characteristics, Gurr (1974) established simple additive measures (ranging from 1 to 7) of autocracy, democracy, and anarchy (p. 1487, Table 2). The intention was to characterize autocracies by the institutionalized monopolization of politics and power by the central government and to define democracies by the presence of "multiple institutionalized centers of powers, some of which are open to widespread citizen participation" (p. 1487). This led to a set of operational definitions of three basic system types, which are summarized in Gurr (1974) (see also Gurr, Jaggers, and Moore 1989).

Gurr et al. (1990) refined these coding rules and categories (pp. 84-85) and applied them to a larger number (155) of more recent polities, spanning the period from 1800 through 1986. The resultant data were widely used in statistical analyses (e.g., Bremer 1993; Dixon 1994; Modelski and Perry 1991; Siverson and Starr 1994) and are known as the Polity II data set. The revised scores were derived from the following rules:

1. *Institutionalized democracy*, cumulatively summed using the following rules:
   - 3 points for competitive elections, 2 points for transitional political participation, 1 point for factional political participation;
   - 2 points for elective executive recruitment, 1 point for transitional executive recruitment;
   - 1 point for open or dual election for openness of executive recruitment;
   - 4 points for executive parity or subordination to legislative or judicial branches of central government, 3 points for intermediate constraints on executive constraints, 2 points for substantial limitations on the executive branch of central government, 1 point for moderate limitations on the executive branch of central government.
2. *Institutionalized autocracy*, cumulatively summed using the following rules:
   - 2 points if participation is suppressed, 1 point if it is restricted;
   - 2 points if participation is restricted, 1 point if it is factional and restricted;
   - 2 points if the executive is selected, plus 1 additional point if executive recruitment is closed or there is a dual executive that is chosen by designation;
   - 3 points if the executive has unlimited authority, 2 points if the constraints are intermediate, 1 point if there are slight to moderate limitations on the executive.

2. It serves remembering that an ideal democracy also might be defined in reference to an *absence* of hierarchical, ordered social relations.

TABLE 1
Summary Coding Rules for Polity III Democracy and Autocracy Indicators

Authority Dimension	*Democracy Points*	*Autocracy Points*
Competitiveness of political participation [1, 7] (PARCOMP)		
Competitive	3	0
Transitional	2	0
Factional	1	0
Restricted	0	1
Suppressed	0	2
Not applicable	0	0
Regulation of political participation [1, 5] (PARREG)		
Regulated	0	0
Factional or transitional	0	0
Factional/restricted	0	1
Restricted	0	2
Unregulated	0	0
Competitiveness of executive recruitment [1, 4] (XRCOMP)		
Election	2	0
Transitional	1	0
Selection	0	2
Openness of executive recruitment [1, 7] (XROPEN)		
Election	1	0
Dual: hereditary and election	1	0
Dual: hereditary and designation	0	1
Closed	0	1
Constraints on chief executive [1, 7] (XCONST)		
Parity or subordination	4	0
Intermediate 1: between ↑ and ↓	3	0
Substantial limitations	2	0
Intermediate 2: between ↑ and ↓	1	0
Slight to moderate limitations	0	1
Intermediate 3: between ↑ and ↓	0	2
Unlimited power	0	3
Total scores given by:	Σ Democracy points	Σ Autocracy points

SOURCE: Adapted from Jaggers and Gurr (1995, 472).

In 1995 (and 1996), the Polity data were again updated and further refined, largely to bring the data up to date and accommodate "the rapid and fundamental changes that have taken place in the international system since 1986 and the widespread use of the Polity II data" (Jaggers and Gurr 1995, 470). The new data, Polity III, encompass 161 independent polities with populations greater than one half million (in the early 1990s), including virtually all the successor states to the Soviet Union and Yugoslavia. Combined with the earlier Polity II data set, these data are the most complete and up to date as well as the most historically extensive data on authority characteristics, encompassing all independent polities since 1800.[3] Table 1 portrays the coding rules

3. All versions of the data set have been made available to scholars via the data repository at the Inter-University Consortium for Political and Social Research housed at the University of Michigan. The Polity III data, with some minor corrections, also are available via ftp to isere.colorado.edu.

(in summary form) that were used to code these data. Jaggers and Gurr present an analysis of the modifications. Table 1 reveals, in a crisp format, the basic logic behind the Polity III coding, which was designed to be more sensitive and responsive to transitory changes in the levels of democracy and autocracy in modern polities (p. 472).

Measurement of authority characteristics has evolved over the three versions of the Polity data, primarily through a progressive differentiation of the categories for the competitiveness of political participation and the constraints on the chief executive. Gurr (1974) was reluctant, in his early work, to denote which polities were democracies and which were autocracies, noting that "no attempt is made to label a polity as a 'democracy' or an 'autocracy' " (p. 1487). Recent efforts have evolved to the point where the purpose of the data collection seems to be to label polities as democratic or autocratic so that recent writing includes yearly counts of the number of democracies and autocracies (Jaggers and Gurr 1995, 479, Table IV). In secondary analyses that employ the Polity data set, it is precisely whether a polity is democratic or autocratic that is most often derived from the data.[4]

It also is important to note that although the dimensions involved derive fairly directly from the structural framework for analyzing social relationships as presented in Eckstein and Gurr's (1975) *Patterns of Authority*, the linear additive nature of democracy and autocracy scoring is ad hoc. At the same time, it does preserve the analytical goal of allowing multiple paths for participation, institutional design, and competitive processes in both democracies and autocracies.

In the next section, we examine the extent to which the dimensions really add up to the overall index and return to some of the issues raised by this summary.

ASSESSING AUTHORITY CHARACTERISTICS FOR WHAT THEY ARE

In this section, we undertake a variety of analyses that seek to probe the authority characteristics and their interrelationships.[5] In particular, we look at the various possible combinations that could lead to the different values on the democracy and autocracy scales. Then we turn to a tree-based approach to explore these interrelationships. Next we undertake a Markov analysis to look at the probabilities of change in the polity scores, with an eye toward establishing how stable or volatile these empirical measures are.

PERMUTATIONS AND COMBINATIONS

Given the coding established by the Polity III framework (and excluding the possibility of missing data), there are 360 ($5 \cdot 2 \cdot 3^2 \cdot 4$) possible combinations of

4. A significant and almost singular exception is the work of Mansfield and Snyder (1995a, 1995b), which employs subdimensions. See also the interesting work by Clague, Keefer, Knack, and Olson (1996).

5. We focus our analyses on those dimensions of the Polity III data that are employed in the measurement of democracy and autocracy. As such, we ignore the XRREG, CENT (centralization of power), and MONO (monocracy) variables.

authority characteristics that lead to the 11 possible scores for the democracy scale and 144 ($3^2 \bullet 2^2 \bullet 4$) for the autocracy scale.[6] These combinations conform to the theoretical desire for multiple paths to single end points on the scales. However, in actuality, an analysis of the Polity III data reveals only 54 combinations for the democracy scale (15%) and only 57 for the autocracy scale (40%). This suggests that the empirical world of authority characteristics is considerably more constrained than the theoretical possibilities would suggest.

As an example, Table 2 shows the 10 ways that *actual* polities in the data set receive the value of 6 on the democracy scale in the Polity III data set. What is clear from Table 2 is that a wide range of polities is classified as having a low level of democracy; these include polities spanning different centuries with very different authority structures. This is true for all levels of democracy and autocracy scores, even those at the extreme (high and low) values. Thus, a wide variety of authority patterns supports each level of democracy and autocracy derived from the Polity data sets. This does not necessarily detract from the usefulness of the data because they were constructed to study a wide variety of authority patterns and attempt to be broadly comparative across space and time.

TREE-BASED MODELING

Tree-based modeling approaches provide a new technique for determining structure in situations in which a response variable is determined by classifications. Thus, tree-based modeling allows one to statistically construct nonlinear, nonadditive models of the sort that produce rules of the following form: *if* $x \leq 2.5$ and $z \in [1, 2]$, *then* y is most likely to have a value of 3. These *if . . . then* statements are exactly the sort of rules that were used to generate the democracy and autocracy scales.

Basically, this approach is entirely inductive and focuses on the interactions of the categorical variables. No specification is made about the number of branches or cutoff points because these are determined entirely by the variance partitioning algorithm. The algorithm divides the cases by iteration into categories in which the variance is most homogeneous within each group. The algorithm determines empirically which variable is best able to reach a satisfactory set of groupings. Then as the algorithm moves down the tree, it progressively splits each group into homogeneous subgroups. The number of branches, the number of groups, and the homogeneity of the groups are determined entirely by the tree-based algorithm.

Clark and Pregibon (1993) built on the early work of Sondquist and Morgan (1964), Morgan and Messenger (1973), and Kass (1980) and provided a heuristic approach to tree-based modeling that is grounded in the progressive, recursive partitioning of the data structure. Scholars argue that tree-based models are easy to interpret, but their primary benefit is their ability to capture nonadditive behavior by discovering (rather than having to prespecify) important interactions among the data categories. Tree-based modeling seems an especially good way in which to help answer the question

6. Including the various missing data codes (–66, –77, –88, –99), there are 21,168 combinations for the democracy scale and 14,112 for the autocracy scale, a total of 35,280. Of these, a scant 409 (or 1.16%) are observed in the Polity III data.

TABLE 2
Ten Paths to a Democracy Scale of 6 in Polity III

Democracy Scale	*Competitiveness of Executive Recruitment*	*Openness of Executive Recruitment*	*Constraints on Chief Executive*	*Competitiveness of Participation*	*Selected Example*
6	Selection	Open	Parity or subordination	Transitional	Spain 1895-99
6	Dual/transitional	Dual: election	Parity or subordination	Not applicable	
6	Dual/transitional	Open	Intermediate category 1	Competitive	Taiwan 1991-94
6	Dual/transitional	Open	Substantial limits	Transitional	
6	Dual/transitional	Open	Intermediate category 3	Factional	
6	Dual/transitional	Open	Parity or subordination	Not applicable	
6	Dual/transitional	Open	Parity or subordination	Restricted/transitional	United Kingdom 1837-79; Fiji 1991
6	Regulated	Open	Slight to moderate	Competitive	France Fifth Republic
6	Regulated	Open	Intermediate category 2	Transitional	
6	Regulated	Open	Substantial limits	Factional	Napoleonic France

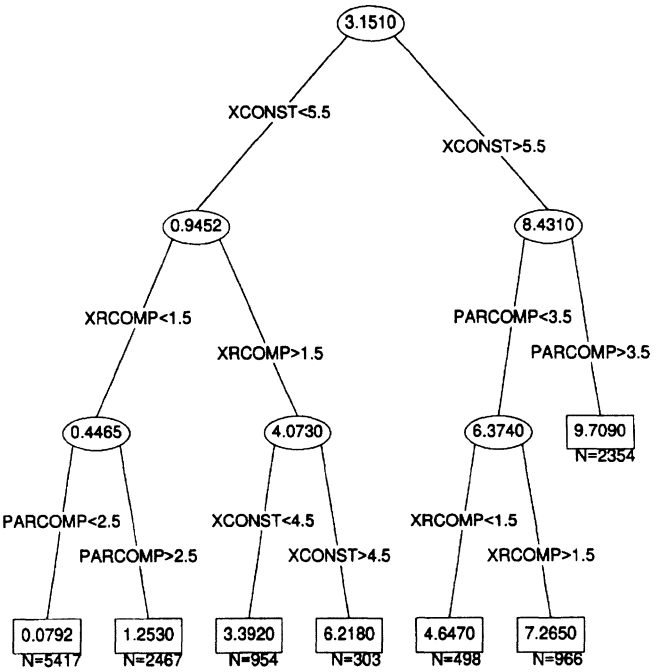


Figure 2: Tree Model of Polity III Democracy Score

of whether there is theoretical and empirical coherence to the particular combination of authority characteristics that lead to the democracy and autocracy scales.

Figure 2 illustrates the tree derived from a progressive split of democracies based on the variance contained in executive constraints (XCONST), the competitiveness of executive recruitment (XRCOMP), and the competitiveness of participation (PARCOMP). The root of the tree is at the top of the graphic, and the included number at this node (3.1510) is the mean score on democracy for all polities. The tree splits on the executive constraints; if they are 6 or 7, then the branch goes to the right and these cases have a mean democracy score of 8.43; otherwise it goes to the left, yielding a mean democracy score of slightly less than 1.00. The tree continues splitting in this fashion until no further splits are statistically justified. There are 7 end points (or leaves) indicated by a rectangle containing the average democracy score in each group. The number of cases in each leaf is indicated under each rectangle.

Figure 2 shows that executive constraint is the most important variable in determining the democracy score for a given polity, followed by recruitment patterns for polities with low to moderate constraints and participation for polities with highly constrained executive decision makers. The average scores in the leaves are fairly transitive with groups of polities, with low democracy scores on the left and high scoring democracies on the right. There is one intransitivity among the leaves (6.218 >

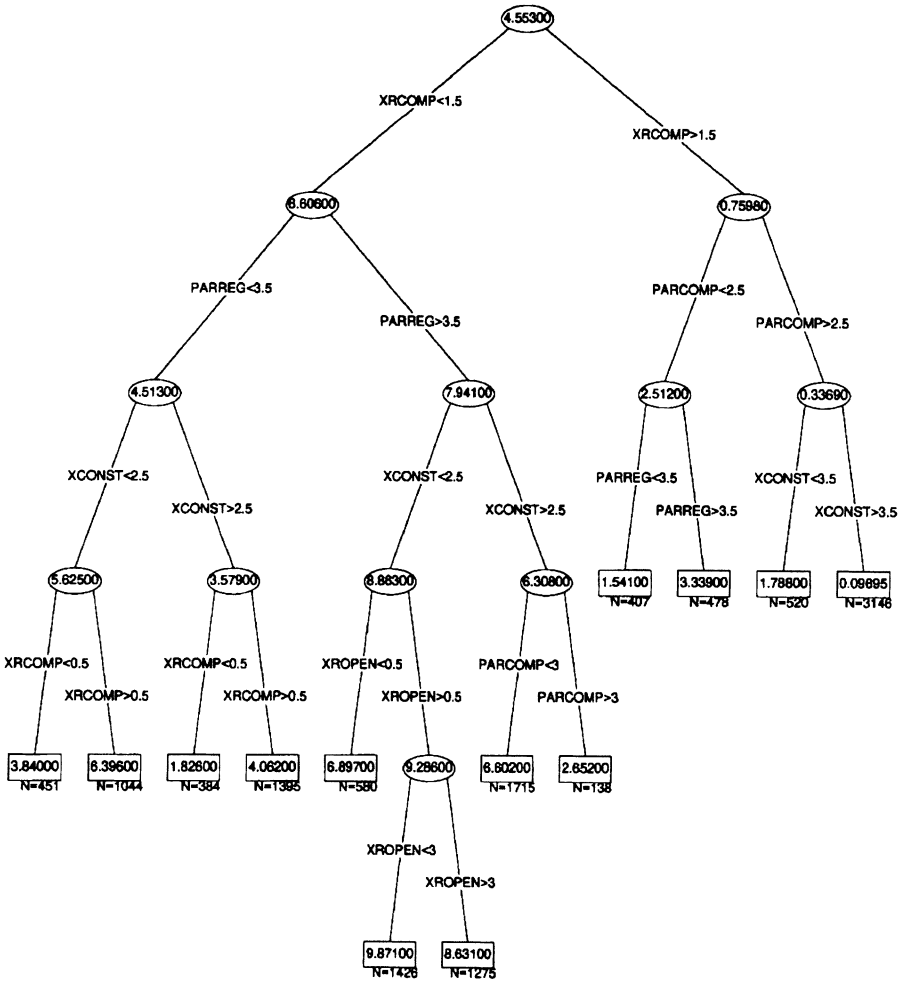


Figure 3: Tree Model of Polity III Autocracy Score

4.647). The overall determinacy of executive constraints illustrates how some nineteenth-century polities such as Britain and the United States receive fairly high democracy scale scores while having fairly low values on participation and recruitment. It also is important to note that the empirical tree is developed without using the openness of executive recruitment. Stated differently, this variable does not influence the democracy scale empirically despite being part of its construction.

The same analysis for the Polity III autocracy scale (Figure 3), however, shows that executive recruitment is the most important determinant of the autocracy scale values, entering at the root of the tree where polities with elections are separated from those with ascriptive or designated executive selection processes. What is most apparent in

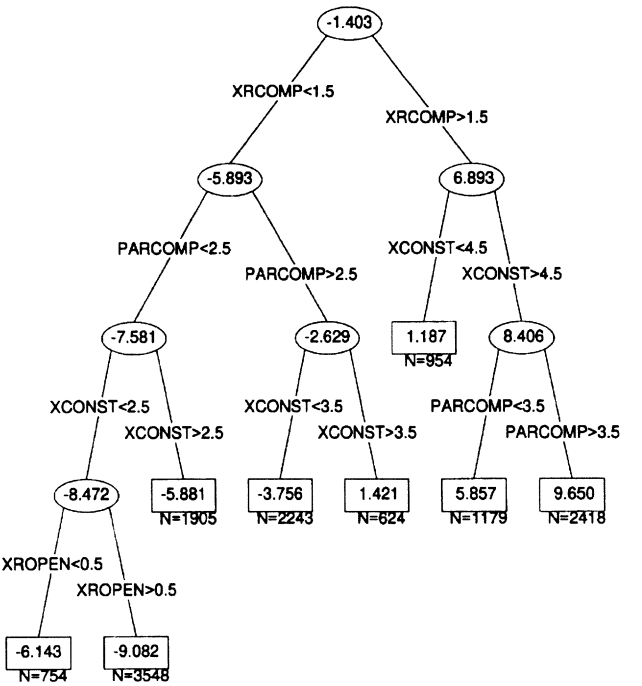


Figure 4: Tree Model for Polity III Democracy Minus Autocracy Scales

this tree is not only its greater number of branches with a resultant 13 leaves (compared to 7 in the case of democracy) but also its highly nonlinear and intransitive structure. The highest autocracy scores actually fall toward the center of the tree, not toward either end. However, there are several exceptions. The overall structure is determined by executive recruitment, followed by participation and openness.

It is interesting that the empirical tree for the democracy-autocracy scale (Figure 4), an indicator widely used in the literature, is quite symmetric (although not perfectly), with high positive values at the high end of the scale and high negative values at the low end. Two intransitivities occur, each reflecting the deeper structure to autocratic polities.

To probe the question of whether the tree-based structure was time dependent, we developed tree models that used sliding windows across the period from 1800 to 1994. These are presented in Figure 5. Each of these trees is composed of 2,000 observations, with 500 dropped from the beginning and 500 added to the end of each sample for each time increment.[7] We explored nonoverlapping windows and moving windows. What stands out most clearly in this analysis is that, over time, the depth of the tree structure is reduced rather drastically to the point where, in the post-World War II era, it is effectively flat. Furthermore, it is clear that prior to 1880 and after 1969, the main

7. We examined smaller and larger slices and increments but found essentially the same patterns as those reported for this particular specification.

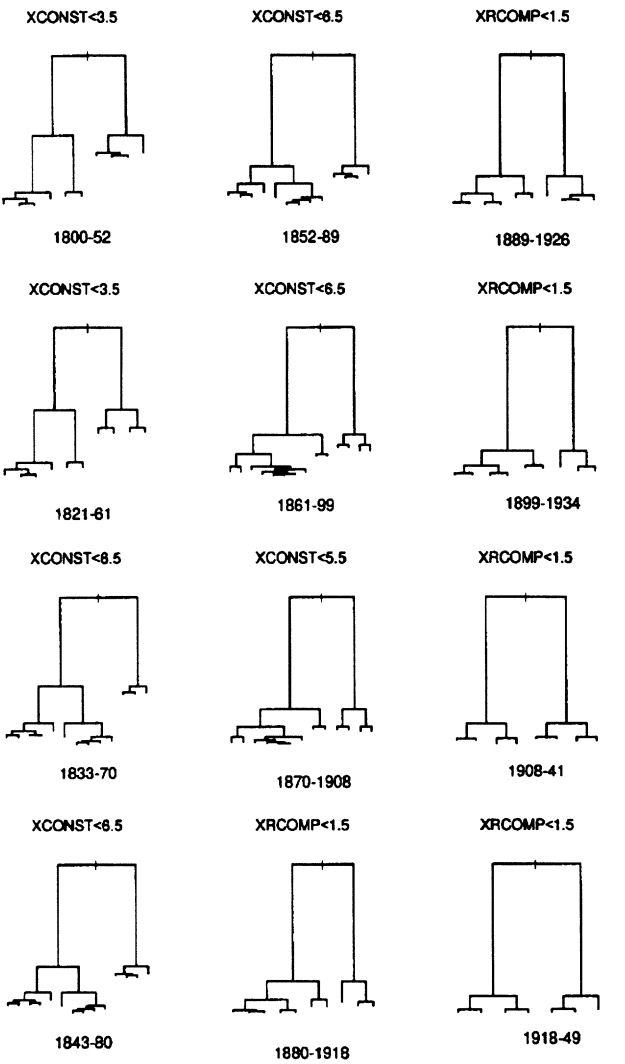
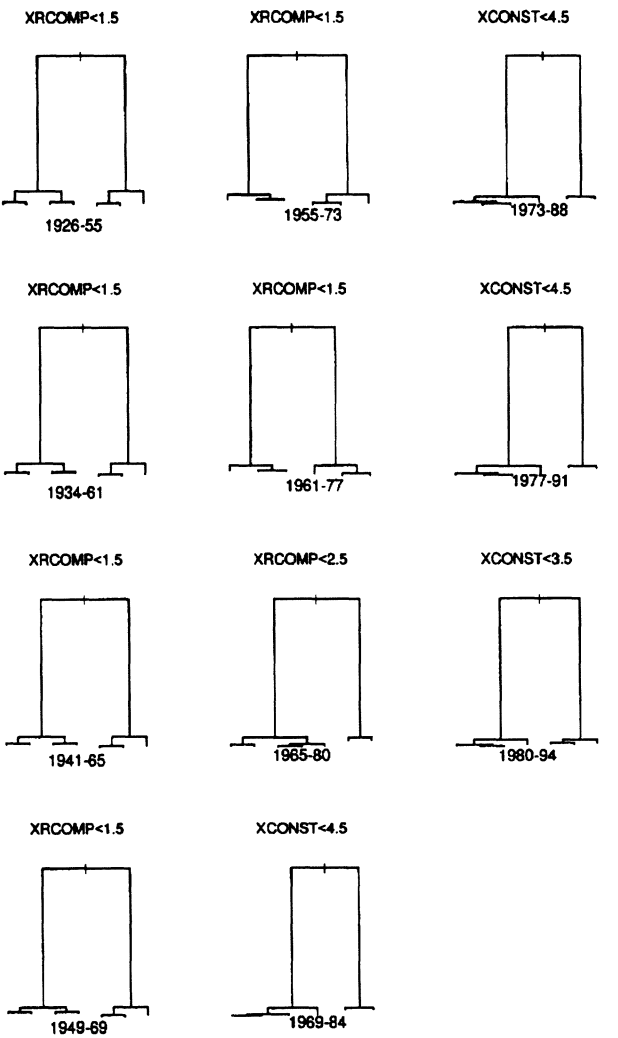


Figure 5: Moving Windows of Tree Models of Democracy Minus Autocracy

node in the partitioning of polities is determined by executive constraint. Before 1821, many polities are monarchies, whereas in recent decades there are fewer monarchies and more mixed and democratic structures. Between these two epochs, it is the competition for executive recruitment that largely determines the authority structure of modern polities. Thus, not only does the structure of authority relations get "less complicated" over time, but different aspects of authority patterns appear to rise and fall in importance. The depth of the tree representations of the data gets much simpler as one moves into the contemporary era. By the period from 1980 to 1994, the tree has



two very simple branches, one representing low levels of executive constraints (< 3.5) and one more democratic branch with high levels of constraints on the executive decision makers. Even for executive constraints, the cutting point of dividing low and high scale scores (on the democracy minus autocracy scale) changed markedly. Over the entire period since 1800, each possible scale value has been a cutting point.

We conclude that the structure reflected in the Polity III scales is not stable in degree or category over the long period from 1800 to the present. Democracy, autocracy, and democracy minus autocracy have different—indeed very different—characteristics.

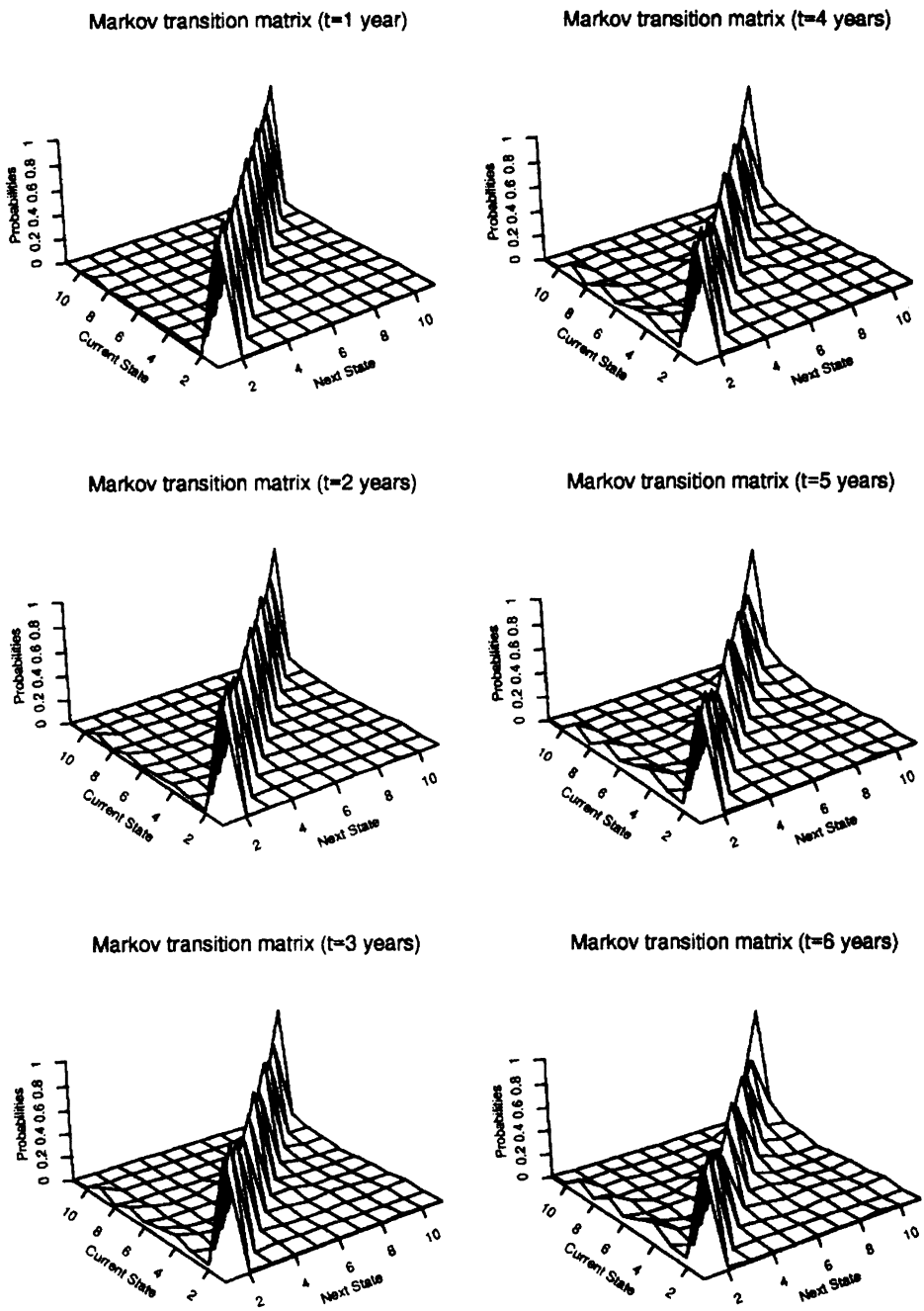
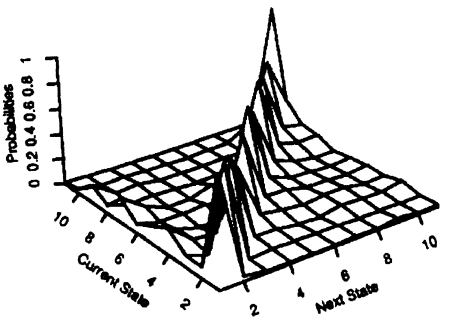
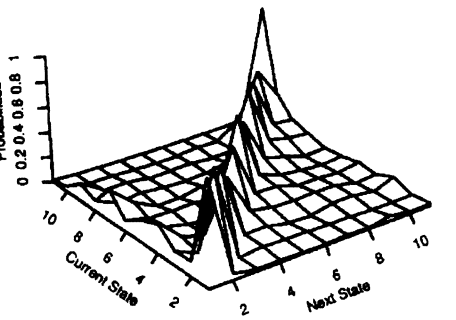


Figure 6: Changing Topology of Markov Process for Polity III Democracy Scale

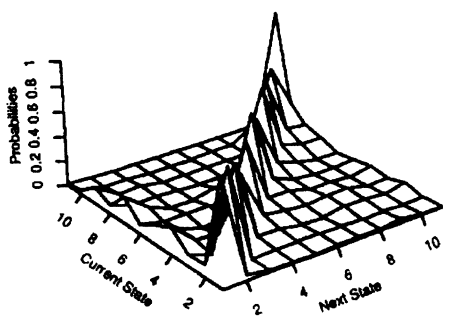
Markov transition matrix (t=7 years)



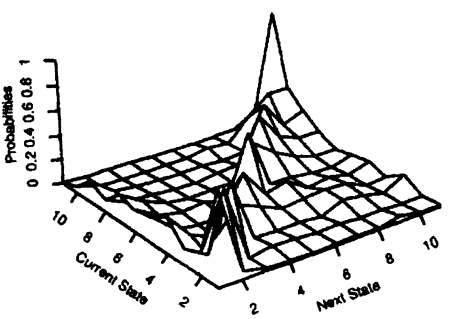
Markov transition matrix (t=10 years)



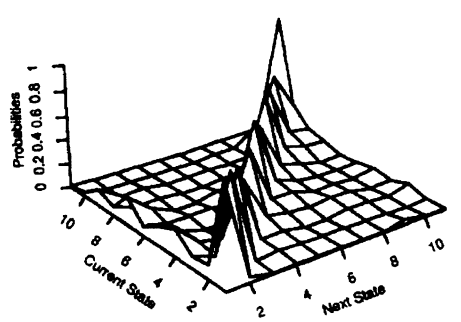
Markov transition matrix (t=8 years)



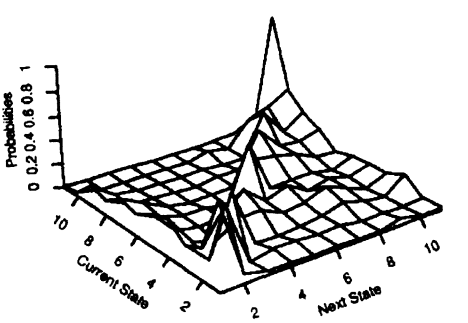
Markov transition matrix (t=20 years)



Markov transition matrix (t=9 years)



Markov transition matrix (t=30 years)



We also observe that what many would promote as a hallmark of democratic societies, namely the extent and character of popular participation in selection of leaders, is either totally absent or relatively unimportant in determining the degree of democracy in a society.

MARKOV MODELS

How volatile are the democracy and autocracy scales over time? One way in which to answer this question is to look at the Markov transition matrices for the democracy, autocracy, and democracy minus autocracy scales. These are quite simple and are calculated as the proportion of cases that are in category K at time t but wind up in category L at time $t + 1$. Democracy has 11 scale values in the Polity III data [0, 10]. Of the polities that have a democracy scale of 0, for example, what proportion of them have a democracy score of 1 during the subsequent time period? We calculate these using time lags of up to three decades. Rather than display these as tables of numbers, however, we use a three-dimensional display and a contour map, where the height of the contour is proportional to the probabilities. Figure 6 illustrates these data for institutionalized democracies. It shows that, over a decade, there is virtually no change in a society's democracy scale score. The diagonal ridge is at a probability height greater than 0.95; this suggests that, at all levels of democracy, a prediction of no change in the subsequent 9 years usually will be correct. Although this result may seem particularly obvious given that regime transitions are fairly rare events, it plagues many empirical analyses of democracy that are based on a notion of democratization or change.[8]

However, if one looks at a longer time frame, then more change is evident. In Figure 7, we present the Markov probability topologies and contours for the democracy minus autocracy scale values at time lags of 10, 20, and 30 years.[9] In the main, the primary result holds up over a three-decade period; the best estimate of the democracy minus autocracy scale score for any given country three decades hence still is its current score. However, more is evident in the graphics. In particular, there is a noticeable ridge in the upper part of each graph, especially evident in the 30-year transitions, which reflects a fairly substantial probability that highly democratic polities will continue to become more highly democratic. There is a weaker corresponding trend for autocracies, markedly less evident in the graphic displays. In addition, a tendency of highly democratic societies to become less democratic is evident in the upper left quadrant of each graphic of Figure 7. This increases as the time frame extends toward three decades. Thus, we do see some evidence of modest

8. Using measures of democracy derived from the Gastil Freedom House data set on political and civil liberties (1972-1989), Burkhart and Lewis-Beck (1994) came to the same conclusion; their correction for autocorrelation on democracy yielded a coefficient of .96 (p. 910, note 6). See Gleditsch (1996) for a discussion of the nonchanging nature of democracy scores. Basically, this suggests that much of the variance in polity scores is spatial, not temporal. We return to this later in our discussion of Markov transition matrices.

9. These scores have been rescaled from the interval [−10, 10] to the positive integers [0, 20]. Low values are polities with high autocracy scores and low democracy scores (i.e., autocratic phenotypes), whereas high values characterize societies with a high degree of democracy but a low level of autocracy (i.e., democratic phenotypes).

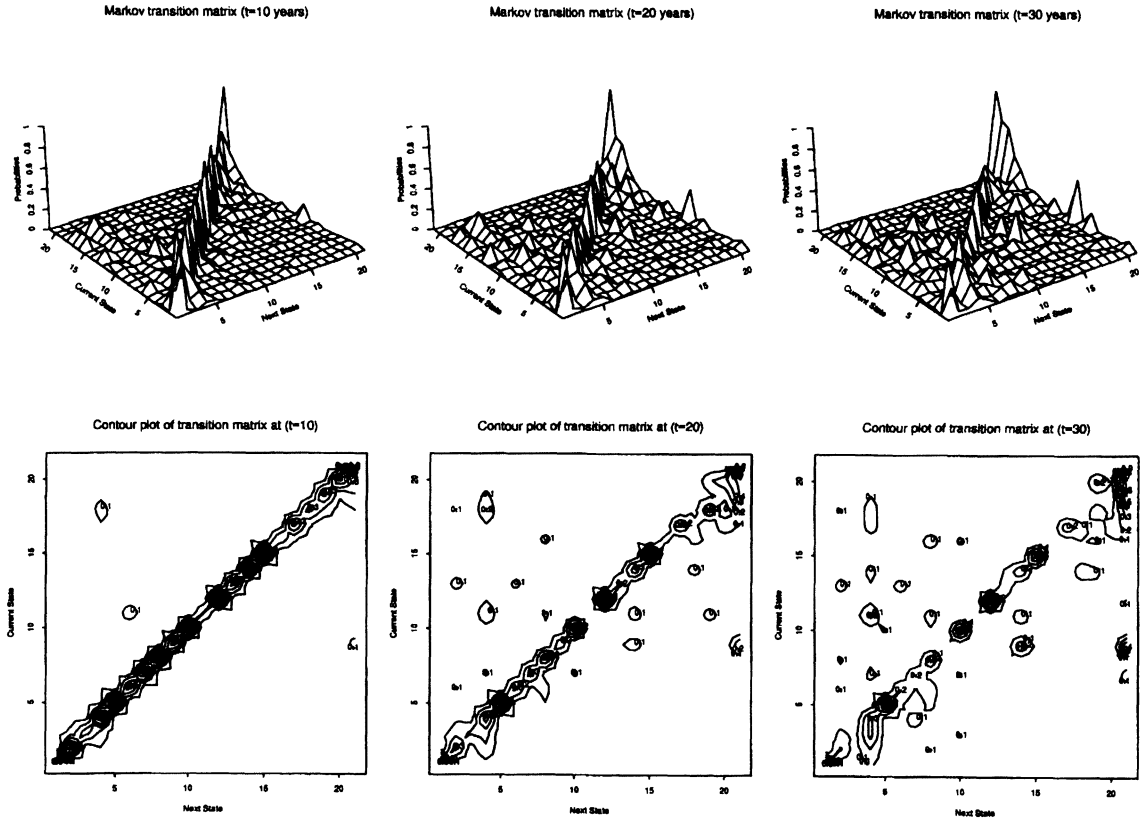


Figure 7: Markov Topologies for Democracy Minus Autocracy

TABLE 3
Component Correlations with Scales ($N = 13,123$)

Polity Dimension	*Democracy Minus Autocracy*	*Democracy Scale*	*Autocracy Scale*
Competitiveness of executive recruitment (XRCOMP)	82	86	–71
Openness of executive recruitment (XROPEN)	45	46	–41
Constraints on chief executive (XCONST)	89	90	–82
Regulation of political participation (PARREG)	12	28	–.06
Competitiveness of political participation (PARCOMP)	79	79	–74

SOURCE: Polity III data.
NOTE: Entries are Pearson correlation coefficients multiplied by 100.

"reversals," although these are relatively infrequent. On the right hand, upper edge spikes are evident, representing a fairly large number of cases that, over 30 years, move from very low levels of democracy to the highest levels of democracy. The upper left quadrant shows some patterns of some sets of highly democratic states having a tendency to move toward fairly highly autocratic characteristics within a three-decade period. There is scant evidence of the contrary. In short, Figure 7 provides a wide range of evidence about not only how slowly authority characteristics change but also how they do change.[10]

Studies that wish to examine democratic change by focusing on an overall measure of democracy will have to have fairly long time frames to capture the variance in democracy scores over time. However, the cross-sectional variance remains quite large for the aggregate measures. Focus on the individual polity characteristics reveals more temporal variation.

The Markov analysis illustrates that despite (or in spite of) a rapidly and frequently changing structure, the end points of the democracy, autocracy, and democracy minus autocracy scores are remarkably stable over time for specific countries.

VALIDATION

It is reasonable to ask how these new data will correlate with other widely employed data sets. At one level, the face validity of these data is attested to by their widespread use in the empirical literature. At another level, the updated data (and the soon to be released version of the data with time stamps) will be validated by their centrality to broadly persuasive studies that employ them.[11] However, it is broadly interesting to examine how these measures covary and complement other widely employed measures. Jaggers and Gurr (1995) reported some of these for an earlier version of the data set.

Table 3 illustrates the basic point that we have been stressing: executive constraints correlates substantially more with the aggregate measures of democracy and autocracy.

10. These characteristics are reminiscent of a punctuated equilibrium, as popularized by Eldredge and Gould (1972), that change is slow and tortuous as well as rapid and dizzying.

11. One substantive study is that of Ward and Gleditsch (1997), who examine the impact of democratic transitions on war involvement.

TABLE 4
Correlation of Polity III Aggregate Scales with Three Other Democracy Measures

Macro Scale	*Bollen Index* (n = *392*)	*Freedom House Aggregate Scale* (n = *3,382*)	*Vanhanen Index* (n = *1,417*)
Democracy minus autocracy	88	–91	87
Democracy	88	–90	89
Autocracy	–85	88	–82

NOTE: Entries are Pearson correlation coefficients multiplied by 100.

TABLE 5
Correlations of Polity III Subdimensions with Three Other Measures of Democracy

Macro Scale	*Bollen Index* (n = *392*)	*Freedom House Aggregate Scale* (n = *3,382*)	*Vanhanen Index* (n = *1,417*)
Constraints on the chief executive	82	–85	82
Competitiveness of executive recruitment	85	–83	79
Openness of executive recruitment	37	–33	31
Regulation of political participation	11	–10	28
Competitiveness of political participation	82	–92	86

NOTE: Entries are Pearson correlation coefficients multiplied by 100.

Neither the openness of executive recruitment nor the regulation of political participation shares very much variance with the overall scale scores, although both the competitiveness of executive recruitment and the competitiveness of political participation are strongly correlated with democracy and autocracy.

In Table 4, we show the correlations of the macro scales with three other measures of democracy that have been widely employed in the literature. These three are (1) the Bollen (1993) democracy scores taken from his analysis of the error covariance structures of selected aggregate variables, (2) the aggregate sum of political and civil rights indicators taken from the Freedom House evaluations (Gastil, 1987), and (3) the multiple indicator approach of Vanhanen (1984, 1990). Although we could choose numerous other measures, many of them are dichotomous. In addition, each of the three we have chosen represents a fundamentally different method of deriving the measurements. The results show that these four basic methods—the Polity III and the three aforementioned—in different samples and different time frames share a large amount of covariance and in general point toward a broad aggregate convergence in the measurements.

However, in Table 5, we examine the correlations of the Polity III subdimensions with the three other measures and find some significant and interesting divergences. In particular, executive constraints on the chief executive is not the most highly

correlated component as it was in the Polity III scales, although it is highly correlated with the external indexes. The Bollen index is most highly correlated with the competitiveness of executive recruitment, but the other two measures are most highly correlated with the competitiveness of political participation, which, interestingly, plays a relatively minor role in our analyses of the aggregate Polity III indexes. This suggests to us that, for information on broad political participation, the Polity III subdimension has great potential and that aggregate measures such as the Freedom House and Vanhanen scales are more responsive to this subdimension.

CONCLUSION

What have we learned in this study?

1. The Polity data are categorical. This is clear from the outset because the data were collected and assembled with this in mind. However, much of the literature that employs these data has ignored this obvious fact.
2. These categorical data encompass a small, but important, number of subdimensions that interact in a variety of nonobvious ways.
3. The data are *multipath* in that there is a wide variety of ways in which polities can receive a single scale value. At the risk of stating the obvious, all polities with a scale score of X are not equivalent, although they may be broadly comparable for specific purposes. Stated differently, vastly different temporal, spatial, and social contexts support the same democracy and autocracy scale values.
4. Although there is a variety of ways in which to achieve a particular score on the major dimensions, only a relatively small percentage of these paths are actually observed in modern polities.
5. The degree of constraint on the chief executive is largely a determinant of the democracy, autocracy, and democracy minus autocracy scale scores.
6. The autocracy scale score is highly nonlinear, asymmetric, and intransitive.
7. The democracy scale score is much simpler but remains (slightly) intransitive.
8. A scale composed of democracy minus autocracy scores is fairly symmetric and preserves transitivity. However, the structure of this index collapses in the contemporary epoch into a straightforward split on whether there are substantial constraints on the chief executive.
9. Despite their prominence in the theoretical and normative discussions of democracy, patterns of recruitment and the extent and competitiveness of participation are not especially powerful in determining the degree of democracy or autocracy in modern polities as reflected by the Polity data set.
10. In general, there is very little change in the degree of democracy or autocracy for individual polities over relatively short periods of time. On average, it takes between two and three decades before one observes a propensity for the authority characteristics to change.
11. Although the degree of executive constraints accounts for only 4 of the possible 10 democracy scale points, all of our analyses point strongly to the conclusion that this variable virtually determines the democracy and autocracy scale values. Localized regression and tree-based models illustrate the nonlinearities and interactive effects of subdimensions on eventual scale scores. Stated differently, democracy and autocracy scale scores in the Polity data are overdetermined. If there are waves of democratization, then they show up via waves of increasing constraints on chief executives.

12. Finally, we conclude that these data are potentially very useful for unfolding the degree and process of democratization and autocratization. However, we believe that using the data summarily to classify modern polities as democracies directs attention away from the actual data that have been collected on authority patterns. Our sentiments therefore are with Gurr's (1974, 1487) early position against using these data to label polities as *democracies* or *autocracies*. The practical import is to focus more on the change that does exist within these authority patterns by a greater concentration on the subdimensions.

Considering these conclusions, we recommend that analyses using the Polity devote greater attention to the categorical nature of the data, in particular by focusing on the important subdimensions, especially the structural and institutional constraints on the decision-making latitude of the chief executive. Stated starkly, the greatest opportunities are those that encourage an unfolding of the concepts of democracy and autocracy. In that unfolding, we may advance toward what is actually going on within the polity or within the wider political context.[12]

It is interesting that, for the democratic peace literature, for example, this concept has the greatest number of theoretical linkages to why certain foreign policies may be preferred in democratic rather than autocratic societies. For the democratization literature, this may shed some light on the manner in which democratic change is instituted and how it may spread across time and space. In particular, it would seem clear at this juncture that although norms may be important in analyzing the consequences of democracies, it is the structures—in particular, the control of the executive branch—that is most determinant of actual measured levels of democracy. We may never know *why* certain changes occur or are associated with other phenomena, but by looking inside the characteristics of polities rather than concerning ourselves only with whether they are classified at one extreme or the other, we may learn more about the processes that undergird their fundamental behavioral differences.

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12. Recent work on this line of reasoning would include the efforts of Bueno de Mesquita and Siverson (1996), who develop a theory of domestic politics that helps to explain certain international policies. However, these analyses have yet to break apart the regime characterizations into their subcomponents.

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