Two Persistent Dimensions of Democracy: Contestation and Inclusiveness

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Because democracy is central to much comparative and international political research, it is crucial for political scientists to measure it validly. We challenge the common assumption that most existing indicators of democracy measure the same single dimension. We present 11 different streams of evidence to show that about three-quarters of what Polity, Freedom House, and other indicators of democracy have been measuring consists of variation on the two dimensions of democracy that Robert Dahl proposed in Polyarchy*—contestation and inclusiveness. These two dimensions were consistently fundamental to the most commonly used indicators of democracy from 1950 to 2000. Our analysis produces new indicators of contestations and inclusiveness for most countries from 1950 to 2000.*

There has been increasing quantitative research on the causes of democratization (Boix 2003; Geddes 2003; Huntington 1991; Lipset, Seong, and Torres 1993; Mainwaring and Pérez-Liñán 2005; Muller 1995; O'Loughlin et al. 1998; Przeworski et al. 1996) and on its consequences, from economic outcomes (Boix 2003; Przeworski et al. 2000) to the democratic peace (Enterline and Greig 2005; Maoz and Russett 1992). All of this research requires quantitative indicators of democracy that measure democracy validly (Munck and Verkuilen 2002). Part of valid measurement is the proper alignment of the theoretical dimensions of democracy with its empirical dimensions. Democracy is almost certainly multidimensional, and existing indicators almost certainly focus attention only on selected aspects of the whole concept while neglecting others (Coppedge 2002). But which dimensions have been measured, and which indicators measure which ones? We demonstrate that three-quarters of what the most commonly used indicators of democracy have been measuring is variation on Robert Dahl's two dimensions of polyarchy—contestation and inclusiveness (Dahl 1971, 4).

Aligning theoretical and empirical dimensions is important for sound measurement and therefore for empirical research employing those measurements. If a researcher assumes that a phenomenon varies along just one dimension but then constructs a single indicator of it by adding together some indicators of one dimension and some indicators from another dimension, she increases measurement error, which makes the phenomenon appear to be harder to explain than it should be and makes it appear to have less of an impact on other outcomes than it actually does. And because the extra empirical dimensions in the data create systematic measurement error, they bias the interpretation of any findings that may emerge. Such measurement error has been shown to contaminate the Polity index (Gleditsch and Ward 1997). On the other hand, if a researcher supposes the phenomenon to be multidimensional and creates a separate indicator for each dimension, yet empirically those indicators are unidimensional, then collinearity will make it practically impossible to distinguish one from another (Bollen and Grandjean 1981). This problem applies to Freedom House, which annually publishes separate indices of "political rights" and "civil liberties" that are always correlated at upwards of 0.90. The same situation prevailed in Bollen's indicators of "popular sovereignty" and "political liberty" (Bollen 1980): in the most rigorous examination of dimensions of democracy to date, Bollen and Grandjean demonstrated that these two indicators were unidimensional and were therefore better combined into a single indicator of "liberal democracy" (Bollen and Grandjean 1981). Here, using a larger set of variables, we identify two dimensions of democracy as Dahl's contestation and inclusiveness.

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The identification of these two dimensions grounds them firmly in democratic theory. "Polyarchy" was Dahl's term for real-world approximations of true democracy, which he considered an unattainable ideal-type regime in which governments would be completely responsive to the will of their citizens (Dahl and Lindblom 1953). Although "polyarchy" has not displaced "democracy" in the political science lexicon, it has become one of the most familiar standards for democracy. Dahl defined polyarchy as the existence of eight institutional guarantees: freedom of organization, freedom of expression, the right to vote, broad eligibility for public office, the right to compete for support and votes, the availability of alternative sources of information, free and fair elections, and the dependence of public policies on citizens' preferences.

However, he also argued that these eight guarantees corresponded to two underlying dimensions—contestation and inclusiveness. There is contestation when citizens "have unimpaired opportunities. . . 1. To formulate their preferences, 2. To signify their preferences to their fellow citizens and the government by individual and collective action, 3. To have their preferences weighed equally in the conduct of the government . . . " (Dahl 1971, 2). Inclusiveness is variation "in the proportion of the population entitled to participate on a more or less equal plane in controlling and contesting the conduct of the government. . ." (4). His identification of these two dimensions was both a conceptual and an empirical claim. Conceptually, it was a claim that there is a logical or definitional correspondence between the eight institutional guarantees and either, or both, of these two dimensions. For example, freedom of expression logically corresponds primarily to the aspects of contestation that involve unimpaired opportunities to formulate and signify preferences; the right to vote logically corresponds to the proportion of the population entitled to participate, or inclusiveness. Some guarantees correspond to both. For example, holding elections both allows contestation to occur and includes more of the population in important decisions. What matters is that these guarantees can be understood as reflections of these two dimensions, rather than dimensions that are not part of polyarchy, such as economic efficiency.

Dahl's empirical claim was that the defining components of polyarchy reflect these dimensions not only conceptually, but also empirically. That is, indicators of democracy that primarily measure inclusiveness should vary together, indicators that primarily measure contestation should vary together, and some indicators of democracy may vary with both kinds, but the indicators of inclusiveness should covary less with indicators of contestation than they do with one another, and vice versa. It is useful to reduce polyarchy to these two dimensions only if these expected patterns of empirical association are correct. For example, it makes sense to combine indicators of the right to vote and broad eligibility for public office into the dimension of inclusiveness only if countries that have extensive suffrage also allow most adult citizens to run for public office, and if countries that restrict eligibility for public office also tend to restrict the suffrage. If this empirical relationship is strong, these two institutional guarantees are empirically unidimensional; otherwise, they are more usefully treated as lying on separate dimensions. Similarly, many other indicators should be primarily associated with contestation. For example, countries that guarantee freedom of organization would also hold competitive elections; those that censor the media would also ban political parties; and so on. But Dahl speculated that "contestation and inclusiveness vary somewhat independently" (4), and therefore contestation and inclusiveness are best treated as two separate dimensions.

Also implicit in Dahl's claim was the assumption that these two dimensions are *generally* fundamental, i.e., not artifacts of a particular year or world region, and not disturbed when particular countries change, becoming more democratic or less so. This claim is implied by his references to variation in contestation and inclusiveness "both historically and at the present time" (4) and in "the 140 nominally independent countries existing in 1969" (11), and his use of examples from the eighteenth century to the 1960s.

If it is useful to speak of dimensions of contestation and inclusiveness, the dimensions must make conceptual sense *and* be empirically sound. The truth of one does not imply the truth of the other. Conceptual distinctions and similarities that seem to be perfectly logical can turn out to be hard to reconcile with empirical evidence, and robust empirical associations sometimes have no defensible conceptual interpretation.

Dahl made influential arguments for his *theoretical* dimensions that need not be repeated here (Dahl 1971, 1989); this article tests the claims about *empirical* dimensions. For Dahl's empirical conjecture to be true, three interrelated empirical claims must hold: that some aspects of democracy covary along a dimension of contestation, that other aspects covary along a relatively independent dimension of inclusiveness, and that these relationships are

extensive in time and space and robust to the fluctuations of individual countries. Thus, it is easy to imagine hypothetical situations that would falsify them. For example, all of Dahl's institutional guarantees could vary independently, or they could be more usefully grouped into three dimensions (such as inclusiveness, political rights, and civil liberties) rather than two, into one dimension of democracy, or into alternative dimensions, such as decentralization and individualism, that have nothing to do with regimes. In any dimensional analysis of democracy indicators that contain measurement error, it is also hypothetically possible to identify dimensions that are not related to democracy, such as state capacity, geographic proximity, cultural affinity, or ideological orientations. It is also conceivable that any of these patterns of covariation could turn out to be a statistical fluke due to a temporary alignment of certain countries at a certain point in time.

Data requirements have made rigorous testing of these empirical implications difficult. A test of the number and nature of dimensions in democracy (or polyarchy) requires many different indicators of democracy that capture different aspects of democracy, measured for many countries, ideally over a long period of time. One project that partially tested this relationship was Coppedge and Reinicke's Guttman scalogram analysis of polyarchy, which confirmed that four indicators of contestation—fair elections, freedom of organization, freedom of expression, and media pluralism—were unidimensional and lay on a different dimension from the breadth of the suffrage (Coppedge and Reinicke 1990). However, their suffrage indicator was a single variable, which was insufficient to confirm the unidimensionality of various aspects of inclusiveness. Also, although this study used a large sample, it used data from 1985 only and therefore could not establish that the unidimensionality of contestation was consistent over time. A study by Bollen and Grandjean (1981) found that six indicators of democracy circa 1960 were unidimensional. They were more likely to detect only one dimension because their set of indicators was not as comprehensive as ours. Our analysis includes 13–15 indicators of democracy, compared to their six, which makes multiple dimensions more likely. Our study also covers the world more comprehensively: we analyze up to 191 countries rather than Bollen and Grandjean's 113, and we cover 1950–2000 rather than just 1960.

This exercise was made possible by valuable data compilations by Kenneth Bollen, Pippa Norris, and the Quality of Government Institute (Bollen 1998; Norris 2005; Teorell, Holmberg, and Rothstein 2006). These comprehensive databases are in most ways ideal for our inquiry on democracy's dimensionality.[1] Because not all variables have measurements for most countries and all of the years represented in the dataset, we confine our analysis to three overlapping subsets taken from these compilations. The first is a set of 13 variables for the period 1950–71; the second set includes 15 variables for 1972–88; and the third includes 14 variables covering 1981–2000. The variables and their sources are listed in the appendix, and their coding criteria are described below.

Methodology

If Dahl's conjecture that there are two dimensions of polyarchy is correct, and if some of the best existing indicators do a good job of capturing some aspects of both dimensions of polyarchy, then exploratory factor analysis should identify these two underlying dimensions. This is true even if some or all of the indicators also measure some other aspects of democracy and even if they contain some random error. Factor analysis seeks to define the latent variables that could most efficiently predict a set of actual variables. Exploratory factor analysis is often regarded as more of an art than a science for two reasons. The first is that it does not identify a unique factor: any linear transformation of a factor (a "rotation") would be associated with the variables equally well. The factor analyst therefore exercises discretion in choosing a rotation. The second reason for considering this process an art is that the underlying dimension is latent and is therefore subject to interpretation by the analyst.

The standard solution to the problem of subjective interpretation is to use confirmatory, rather than exploratory, factor analysis. Confirmatory factor analysis (CFA) defines a priori the nature of the latent dimensions to be measured and proposes a hypothesis about which variables will be most useful for measuring each dimension. This hypothesis is then tested, and it can be tested against alternative hypotheses. This procedure makes the most of strong conceptual guidance, which is a good practice as long as the concepts are valid and useful. But sometimes conceptualizations are misleading. Researchers can

[1]One quality that is less than ideal is the ordinal nature of most of the variables analyzed. Obviously, interval-level data would be preferable, but the fact that such strong, robust components emerged in spite of the ordinal data strengthens our conclusions.

have misguided notions about what their variables measure and how they may be most efficiently and naturally combined into indicators of an underlying dimension. When researchers question their preconceived notions and guess the correct alternative, they can use CFA to test for the error empirically. But CFA does not require the researcher to question initial assumptions and certainly does not guarantee that a superior alternative, rather than a straw man, will be tested.

In such situations, it can be more fruitful to use exploratory factor analysis, which has complementary strengths and weaknesses (DeVellis 2003, 132–33). An exploratory analysis offers only weak guidance about how to interpret the dimensions that it produces, but it wears no conceptual blinders that might prevent the researcher from detecting the empirically most natural dimensions contained in the data. In fact, it is a test of one particular grouping of variables into dimensions against all other possible groupings. If any unidimensional hypothesis were superior, the Eigenvalue of the second dimension would be less than one; if a third or more dimensions were justified, their Eigenvalues would be greater than one. And although variables could be grouped differently on the same number of dimensions, any such solution would be less efficient. For some purposes, therefore, it is more useful to explore than to confirm, provided that one has the means to interpret what one discovers during the exploration.

The kind of factor analysis we used is principal components analysis, so we will refer to the dimensions as "components" and the factor loadings as "component weights." We chose an oblique rotation, which allows the two dimensions to be correlated while helping align the component weights of the input variables to vertical and horizontal axes and therefore makes it more likely that a natural interpretation for the dimensions can be found.[2] Our preliminary analyses used as many variables as possible that had some observations in over 90% of the years in the period of observation. Our final analyses, however, include only those variables that consistently loaded on a component with several other variables, enabling us to interpret the dimension with confidence. The results were very comparable either way. After trimming the list of variables and countries in this way, our analysis identified more than two components only in 1953, 1954, and 1993; two and only two components were present in exploratory analyses for the other 48 years.[3] The replacement of missing values with means did not alter the results. To be certain of this, we replicated our analysis using listwise deletion. The correlations between the two sets of estimates were at least .98 for each year.

Interpreting the Dimensions: An Example for 1985

The next two sections report 11 different streams of evidence that confirm Dahl's conjecture. In this section we present evidence that is best illustrated by focusing on a typical year. In the subsequent section, we use evidence from the whole 1950–2000 period. Although no single piece of evidence is definitive proof that we have measured Dahl's two dimensions, it is difficult to imagine any alternative interpretation of these dimensions that would be consistent with all of this varied evidence.

We performed a separate principal components analysis for each year in our three periods. In this section we first present results for a typical year, 1985, so that the meaning and basic parameters of our estimates become familiar to readers. Our illustration using the 1985 data shows that five streams of evidence converge on our interpretation: (1) exploratory principal components analysis identifies two components; (2) the indicators loading on each component are easily interpreted as indicators of contestation and inclusiveness; (3) countries known to have one of the three classic regimes (democratic, totalitarian, or authoritarian) also have the mix of contestation and inclusiveness that corresponds to those regime types; (4) our component scores are highly correlated with the best existing indicators of contestation and inclusiveness; and (5) per capita GDP predicts our contestation component scores the same way it predicts other democracy indicators that primarily reflect contestation.

1. There are two components

Table 1 displays the component weights associated with each of the indicators used in the analysis of 191 countries for 1985 and some other statistics

[2]Although our two dimensions are correlated at about .500, this correlation is too small to justify treating the components as unidimensional. Compare Bollen and Grandjean (1981, 655) who could barely rule out two factors even when they were correlated at .94.

[3]Three of our variables overlapped with those used by Bollen (1980): Party Legitimacy, Effective Executive Selection (Effec), and Leg, the product of Legef by Legsel.

TABLE 1 Principal Components Analyses for 1985

		Variables for 1972–88 KMO=.918, N=191		Variables for 1981–2000 KMO=.919, N=191	
Source	**Description**	**Comp. 1**	**Comp. 2**	**Comp. 1**	**Comp. 2**
Freedom House	Civil Liberties	**−.977**	.121	**−.967**	.105
Freedom House	Political Rights	**−.960**	.020	**−.959**	.049
Vanhanen	Index of Competition	**.927**	.017	**.906**	.019
Polity	Executive Constraints	**.918**	−.028	**.885**	.038
Polity	Comp. of Political Participation	**.913**	−.048	**.923**	.010
Cheibub & Gandhi	Type of Regime	**−.906**	.031	**−.875**	.017
Polity	Competitiveness of Executive Recruitment	**.878**	.032	**.864**	.081
Banks	Party Legitimacy	**.876**	.035		
Banks	Legislative Effectiveness	**.784**	.220		
CIRI	Freedom of Assembly and Association			**.845**	.020
CIRI	Freedom of Speech			**.811**	−.020
CIRI	Political Participation			**.787**	.165
Banks	Competitive Nomination Process	**.576**	.449		
Bollen et al.	Adult Suffrage	−.036	**.873**	.015	**.824**
Banks	Legislative Selection	−.034	**.851**		
CIRI	Women's Political Rights			−.155	**.818**
Banks	Effective Executive Selection	−.098	**.776**		
Vanhanen	Index of Participation	.216	**.636**	.207	**.688**
Polity	Openness of Executive Recruitment	.281	.419	.247	.492
	Eigenvalue	9.22	1.94	8.73	1.54
	Variance explained	61.5%	12.9%	62.3%	11.0%
	Correlation between components	.470			

Component weights with an absolute value greater than .500 are in bold. CIRI is Cingranelli and Richards (2004).

evaluating the analysis. Two sets of analysis are reported because 1985 was included in both the second and third periods. The KMO measure of sampling adequacy is .917 or better, well above the conventional threshold of .800, indicating that there is a healthy ratio of the number of indicators to the number of components extracted. The first component accounts for 62% of the covariance among the indicators and the second component accounts for another 11–13% of the covariance. Only two components have an Eigenvalue greater than one when these variables are analyzed, with very few exceptions.

2. The components are contestation and inclusiveness

The component weights in Table 1 are analogous to the multiple regression coefficients that would be obtained if each indicator were regressed on both of the latent components listed in the table. The greater the absolute value of the component weight, the greater the contribution of the component to the indicator in question. For example, Component 1 contributes a great deal to *Party Legitimacy* but Component 2 contributes very little; Component 2 contributes much to *Legislative Selection* but Component 1 does not; and both components contribute to *Competitive Nomination Process*. Table 1 therefore shows that, in each analysis, 10 indicators are primarily associated with Component 1 and four or five are associated primarily with Component 2.

By examining the grouping of indicators closely to see what they have in common, we can make inferences about the nature of the dimensions that the components represent. We interpret the first component as an indicator of Dahl's contestation dimension. All of the indicators that loaded heavily on the first component are indicators of one or more of the institutional guarantees involving contestation. Freedom House's indices of *Civil Liberties* and *Political Rights* reflect the individual and collective freedoms that are necessary for formulating and signifying preferences and having them count equally via elections. Freedom House Civil Liberties ostensibly

takes into consideration media pluralism, judicial protection of the freedoms of speech and the press, repression of government critics, and violations of civil rights.[4] Freedom House Political Rights ostensibly takes into account the existence of elections and competing parties, the protection of the right to compete in elections, structural unfairness in elections, and disruptions of elections by coups or fraud. *Vanhanen's Index of Competition* is the percentage of the vote won by opposition parties, which signify preferences and give them weight in the legislative process. Gurr's *Executive Constraints* measures presidential powers ranging from unlimited authority to full separation of powers, an independent judiciary, and strong checks and balances. It therefore reflects the multiplicity of institutional actors that could check an otherwise monolithic executive. Gurr's *Competitiveness of Political Participation* reflects degrees of electoral competition, from suppressed competition to interparty competition. Cheibub and Gandhi's *Type of Regime* is an update of the Alvarez et al. dictatorship-democracy dichotomy. The latter authors wrote that "We focus on contestation. Our purpose is to distinguish regimes that allow some, even if limited, regularized competition among conflicting visions and interests from those in which some values or interests enjoy a monopoly buttressed by a threat or the actual use of force" (Alvarez et al. 1996, 4). Gurr's *Competitiveness of Executive Recruitment* is a trichotomous variable that indicates whether executives are competitively elected rather than appointed. *Party Legitimacy* contrasts situations in which all parties are allowed to compete from situations in which some or all opposition parties are banned. *Legislative Effectiveness* is a scale of the legislature's ability to check the executive.

The next three variables were all coded by Cingranelli and Richards from the State Department's *Country Reports on Human Rights Practices*. *Freedom of Assembly and Association* reflects citizens' actual, rather than formal, right "to assemble freely and to associate with other persons in political parties, trade unions, cultural organizations, or other special-interest groups" (Cingranelli and Richards 2004, 21). *Freedom of Speech* "indicates the extent to which freedoms of speech and press are affected by government censorship, including ownership of media outlets" (Cingranelli and Richards 2004, 16). Despite its name, *Political Participation* is a quintessential contestation variable. It reflects the extent to which "citizens enjoy freedom of political choice and the legal right and ability in practice to change the laws and officials that govern them" (Cingranelli and Richards 2004, 3). Banks's *Competitive Nomination Process* reflects both dimensions about equally. It explicitly refers to competition, yet it has necessary implications for inclusiveness, because the selectorate must be small where nominations are not competitive and larger where they are. The fact that these indicators all load more heavily on Component 1 suggests that it measures the ability of citizens to gather independent information, band together in groups such as parties, compete in elections free of government interference, influence the selection of the executive, and have their interests and rights protected by courts and legislative representatives. It would be hard to ask for a better definition of contestation.

We interpret the second component as an indicator of Dahl's inclusiveness dimension. The variable that loads most heavily on this dimension is also the most literal interpretation of inclusiveness: *Adult Suffrage* measures the percentage of adult population over 20 years of age that has the right to vote in national elections. But our broader concept of inclusiveness also captures the size of the group—the selectorate—that chooses the executive or the legislature and holds them accountable (Bueno de Mesquita et al. 2003). Much of the variation in this dimension reflects whether or not elections are held. This makes sense because holding elections is a necessary condition for having an extensive suffrage: even when elections are held with restricted suffrage, the selectorate is more inclusive than any nonelectoral selectorate, such as a royal family or a military junta. As Dahl theorized, "The right to vote in free and fair elections, for example, partakes of both dimensions. When a regime grants this right to some of its citizens, it moves toward greater public contestation. But the larger the proportion of citizens who enjoy the right, the more inclusive the regime" (Dahl 1971, 4). For this reason, the best theoretical guidance suggests that the inclusiveness and contestation dimensions should be correlated rather than completely independent. *Legislative Selection* applies this principle to legislatures by ranging from no legislature to indirectly elected legislatures with a limited selectorate, to directly elected legislatures with the largest selectorate. Next in line is Cingranelli and

[4]We say "ostensibly" because although Freedom House has published long lists of items that it claims to take into account, there has never been a clear description of the procedure by which such information is used to generate its ratings (Munck and Verkuilen 2002). Our description here is based on Bollen's unusually clear and categorical interpretations (Bollen 1998, 37 and 46).

Richards's *Women's Political Rights*, which reflects the inclusion of women in the rights to vote, run for office, hold government positions, join political parties, and submit petitions. Banks's *Effective Executive Selection* can be seen as capturing the inclusiveness of the electorate for chief executives, i.e., whether the selectorate is one person, a body of political elites, or a large number of voters. Vanhanen's *Index of Participation* is simply the percentage of the total population that voted in the last election. Finally, Gurr's *Openness of Executive Recruitment* reflects the size of the selectorate for public offices, from hereditary succession, to designation by an elite body, to competitive election.

3. Known regimes are in appropriate locations

Further evidence for the identification of these two components with Dahl's dimensions comes from a bivariate scatterplot of the component scores.[5] The positions of countries as of 1985 in this two-dimensional space reinforce our interpretation of the dimensions measured by the components. The upper-right corner of the scatterplot contains nothing but polyarchies. The 15 countries closest to this pole (in order of increasing Euclidian distance from the maximum values on both dimensions) are the United States, France, Costa Rica, Italy, Sweden, Denmark, Finland, Austria, Norway, Venezuela, West Germany, Belgium, Greece, Switzerland, and New Zealand. These countries are located on different continents, have both parliamentary and presidential constitutions, two-party and multiparty systems, and vary in levels of economic development. What they have in common is polyarchy. Polyarchies should be located in a corner corresponding to a high degree of inclusiveness and a high degree of contestation. If the vertical axis is contestation and the horizontal axis is inclusiveness, then these polyarchies are where we would expect them to be.

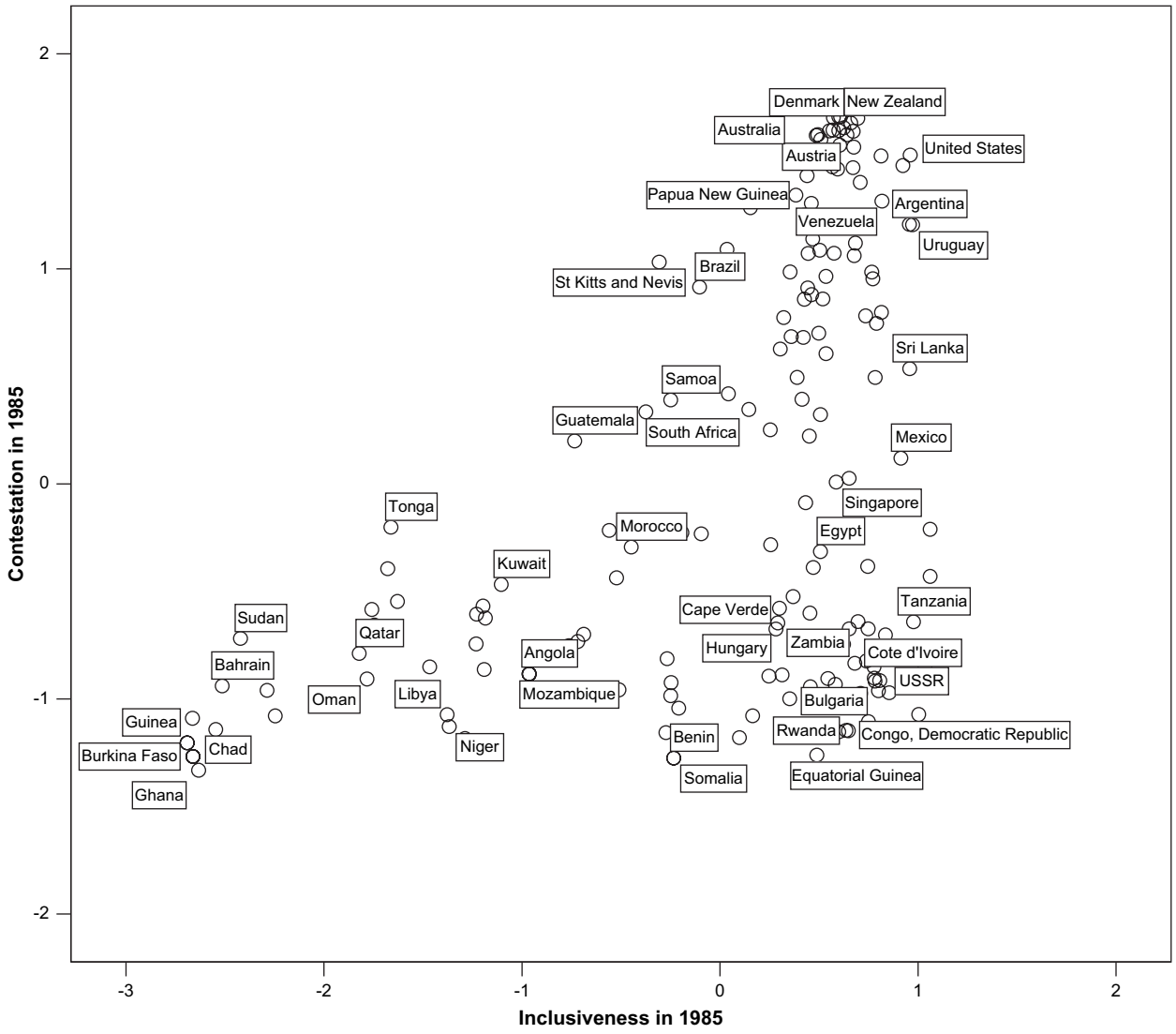
In the lower left of Figure 1, there are two types of cases—authoritarian regimes without elections (as of 1985) and traditional monarchies. The 15 countries closest to this pole are Chad, Burkina Faso, Ghana, Central African Republic, Guinea, Nigeria, Saudi Arabia, Bangladesh, Bahrain, Ethiopia, Mauritania, Sudan, Oman, Qatar, and the United Arab Emirates. If our two dimensions are contestation and inclusiveness, the lower left is exactly where one would expect to find such authoritarian regimes. These regimes are low on inclusiveness, as they exclude most of the population from participation in political life. In fact, some have argued that one of the raisons d'etre of bureaucratic-authoritarian regimes was to exclude the popular sector from politics (O'Donnell 1973). Another defining characteristic of authoritarian regimes is their limited pluralism (Linz 1964, 1975). So it is clear that nonelectoral authoritarian regimes should be rated as noninclusive and noncompetitive. The lower left of Figure 1 is therefore the appropriate zone for them. (Authoritarian regimes *with* elections tend to be found in the center and center-right of the figure, reflecting considerably greater inclusiveness and a bit more contestation.) The presence of traditional monarchies in this same zone makes good sense because such regimes are indeed exclusionary (monarchs and their advisors are unelected) and have limited pluralism: some organizations, even at times some parties, are allowed to exist, provided that they do not challenge the authority of the government. They are equivalent to nonelectoral authoritarian regimes on these two dimensions even though they would not necessarily satisfy criteria for authoritarianism that lie on other dimensions.

The lower-right corner of Figure 1 contains what Dahl called "inclusive hegemonies," a category that includes totalitarian regimes and others that politically mobilize their populations without permitting competition. The 15 countries closest to this pole are Zaire, Syria, Mali, Cameroon, East Germany, Romania, Rwanda, Comoros, Bulgaria, the Soviet Union, Togo, Gabon, Ivory Coast, Czechoslovakia, and Equatorial Guinea. Although these cases are found in distinct world regions and have ideologically distinct ruling parties, they have two features in common. First, they permit little or no contestation: the ruling party monopolizes access to power, and no real opposition party is allowed to exist. Second, citizens are not allowed the luxury of not "participating" in political life; rather, the government forcefully mobilizes them to take part in government-sponsored organizations and activities. These regimes succeed in including more of the population in politics, but at the cost of personal freedom. It is entirely appropriate, then, that Figure 1 places the inclusive hegemonies toward the right on the inclusiveness dimension.

Perhaps most strikingly, the upper-left corner is empty. This is where Dahl's "competitive oligarchies"

[5]We calculated our component scores using the most common procedure, the regression method. The units of measurement are standard deviations.

FIGURE 1 **Distribution of Countries on Our Dimensions of Democracy, 1985**



would be found: predemocratic regimes with some competition among elites but without true mass elections. If our data extended back to the mid-nineteenth century, perhaps this corner would be populated. But the fact that such regimes are extinct and this corner is empty lends additional support to our interpretation.

In short, Figure 1 provides one kind of confirmation of the validity of our interpretation of the dimensions of democracy measured by the two principal components. If Component 1 reflects contestation and Component 2 reflects inclusiveness, then we would expect to see democracies in the upper right, inclusive hegemonies in the lower right, and the most authoritarian regimes at the lower left. And we do. It is difficult to imagine any alternative interpretation of the components that would match this distribution of cases.

4. Our component scores correlate appropriately with the best measures of the corresponding dimensions

Another stream of evidence that confirms the validity of our interpretation of these dimensions is their association with known indicators of contestation and inclusiveness. The Coppedge-Reinicke *Polyarchy Scale* is the best indicator of contestation for 1985 in two ways (Coppedge and Reinicke 1990). First, it was designed to operationalize Dahl's concept of polyarchy; in fact, Dahl himself initiated the project and hired Coppedge and Reinicke to carry it out for this

TABLE 2 **Components Regressed on Per Capita GDP in 1985**

	1972-1988 Sample Estimate		1981-2000 Sample Estimate	
Dependen Variable	**Component 1 (Contestation)**	**Component 2 (Inclusiveness)**	**Component 1 (Contestation)**	**Component 2 (Inclusiveness)**
Log of per capita GDP	.768 (.063, 12.10)	.372 (.077, 4.86)	.812 (.070, 11.54)	.449 (.074, 6.05)
Constant	−.868 (.107, −8.11)	−.348 (.129, −2.70)	−.888 (.119, −7.50)	−.439 (.125, −3.51)
R^2	.552	.166	.526	.234
N	121	121	122	122

Standard errors are in parentheses, followed by *t*-statistics.

express purpose. Their coding criteria self-consciously used Dahl's eight institutional guarantees as the point of departure. Second, the Polyarchy Scale confirmed the unidimensionality of the items that went into its construction. As noted above, this analysis confirmed that four of the component items combine to measure contestation and that a fifth item—the extent of the suffrage—lies on a different dimension, which would most likely be inclusiveness. Therefore, if our first component for 1985 correlates more strongly with the Polyarchy Scale (which measures only contestation) than with the suffrage item, it is probably capturing the contestation dimension of polyarchy; and if the second component for 1985 correlates more strongly with the Coppedge-Reinicke Suffrage item, then it is probably capturing the inclusiveness dimension of polyarchy. This turns out to be the case. The Polyarchy Scale correlates with our two estimates of contestation at .921 and .911, but only at .376 and .330 with the estimates of inclusiveness; and the Coppedge-Reinicke suffrage indicator correlates more strongly with our estimates of inclusiveness (.660 and .576) than with our estimates of contestation (.318 and .316).

5. Income predicts Component 1 like it predicts known indicators of contestation

Nomological/construct validation can be accomplished by examining the relationship of these components with per capita GDP (Adcock and Collier 2001, 542). The logic of this test is that if the same things that explain other indicators of democracy also explain these components, then they probably measure a very similar concept. It has been well established that, in cross-national samples, democracy is associated with the log of per capita GDP. (Debate and research are still ongoing about the reasons for this association; our analysis requires only an empirical association.) But which dimension of democracy is expected to be associated with per capita GDP: contestation or inclusiveness? Expectations have not been precisely defined because a separate indicator of inclusiveness has not existed. However, we believe that the strongest association should be between per capita GDP and contestation, simply because the analyses that gave rise to the generalization in the first place almost always employed indicators that capture contestation more than inclusiveness. As Table 2 shows, this expectation is correct: in our 1985 sample, logged per capita GDP is a significant predictor of Component 1, which ostensibly measures contestation, and it is a less significant or powerful predictor of our inclusiveness variable, component 2. (This opens up a new research agenda: what *does* explain inclusiveness well?) As with other democracy indicators, ln(per capita GDP) explains more than unlogged per capita GDP.

Persistence over Time

All of the evidence so far has used data from a single year. Although we are convinced that we can safely infer the existence of Dahl's two dimensions for 1985, we are more interested in the more general possibility that these same two dimensions existed consistently over a period of decades. In this section we provide evidence that contestation and inclusiveness were the two principal components of democracy every year from 1950 to 2000. We offer six additional kinds of evidence: that (6) exploratory principal components analysis returns two dimensions almost every year; (7) the same indicators load most heavily on the same dimensions in each year; (8) the same two components are extracted even when some indicators are dropped; (9) correlations are high in adjacent years and decay over time; (10) in all years we observe the same tripolar distribution of cases between the

TABLE 3 Variables and Component Weights for the 1972–88 Sample

		Component 1			Component 2		
Source	**Variable**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
Freedom House	Civil Liberties	**−0.975**	−0.993	−0.949	0.135	0.062	0.213
Freedom House	Political Rights	**−0.950**	−0.975	−0.931	0.004	−0.033	0.050
Polity	The Competitiveness of Participation	**0.926**	0.900	0.965	−0.047	−0.090	−0.023
Vanhanen	Index of Competition	**0.923**	0.879	0.948	0.019	−0.012	0.048
Cheibub & Gandhi	Type of Regime	**−0.910**	−0.934	−0.876	0.043	−0.006	0.072
Polity	Executive Constraints	**0.885**	0.838	0.927	0.024	−0.074	0.113
Banks	Party Legitimacy	**0.883**	0.850	0.915	0.037	0.002	0.078
Polity	Competitiveness of Executive Recruitment	**0.830**	0.749	0.900	0.109	−0.003	0.251
Banks	Legislative Effectiveness	**0.720**	0.667	0.786	0.306	0.207	0.384
Polity	Competitive Nomination Process	**0.531**	0.465	0.580	0.509	0.425	0.578
Banks	Legislative Selection	−0.007	−0.068	0.061	**0.887**	0.803	0.919
Bollen et al.	Adult Suffrage (%)	−0.014	−0.056	0.071	**0.857**	0.807	0.904
Banks	Effective Executive Selection	−0.112	−0.169	−0.055	**0.790**	0.719	0.890
Vanhanen	Index of Participation	0.208	0.144	0.296	**0.616**	0.505	0.685
Polity	Openness of Executive Recruitment	0.158	−0.009	0.323	**0.593**	0.373	0.874
	KMO	0.916	0.906	0.925			
	Eigenvalue	9.41	9.13	9.91	1.98	1.92	2.10
	% Variance	62.8	60.9	66.1	13.2	12.8	14.0
	Correlation between components				0.496	0.455	0.556

Mean component weights with an absolute value greater than .500 are in bold.

democratic, authoritarian, and inclusive-hegemony poles; and (11) the same overall distribution prevails even when individual countries change position within the distribution.

6 and 7. There are two dimensions in each year and the same variables load on them consistently

Table 3 reports the replications of the same principal components analysis described for 1985, using data for the whole 1972–88 period. In this period, the two components together account for 76% of the variance, on average, and all the Eigenvalues are 1.92 or greater. The same indicators load heavily on the same components as in the 1985 example, on average; and the range of the component weights across these 17 years is fairly small. These components can therefore be interpreted the same way as those reported for 1985.

8. The same components emerge even when some variables are dropped or added

We replicated the analysis using the different sets of indicators that were available for different years. Tables 4 and 5 report summary statistics for the 1950–71 and 1981–2000 samples. It is not unusual in factor analysis for different factors to emerge when the set of indicators is modified or when the sample changes. It is all the more striking, therefore, that the results in Tables 3, 4, and 5 are so similar. Despite the use of different sets of indicators, despite many changes in the set of countries being analyzed, and despite the fact that these three samples cover a period of 51 years rather than 17, there are still two principal components, the same variables (when available) load heavily on them, the Eigenvalues are high, and about 75% of the variation is explained by the components, regardless of the year. These two components are therefore extraordinarily robust. These estimates persisted when missing values were deleted listwise rather than replaced with means.

9. Correlations are high in adjacent years and decay over time

Further confirmation that the two components are the same in each year comes from Table 6, which reports the average correlations for each component across different spans of years. The more strongly the component for one year is correlated with the same component for a different year, the more likely it is that the two components are measuring the same

TABLE 4 Variables and Component Weights for the 1950–71 Sample

		Component 1			Component 2		
Source	**Variable**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
Cheibub & Gandhi	Type of Regime	**−0.930**	−0.967	−0.876	0.092	0.010	0.142
Vanhanen	Index of Competition	**0.924**	0.876	0.959	−0.026	−0.075	0.036
Banks	Party Legitimacy	**0.921**	0.867	0.972	−0.031	−0.108	0.049
Polity	Competitiveness of Participation	**0.905**	0.843	0.985	−0.146	−0.239	−0.084
Polity	Executive Constraints	**0.865**	0.832	0.889	0.037	−0.021	0.096
Polity	Competitiveness of Executive Recruitment	**0.856**	0.750	0.957	0.075	−0.097	0.201
Banks	Legislative Effectiveness	**0.793**	0.653	0.881	0.228	0.109	0.394
Banks	legef*legsel	**0.786**	0.650	0.869	0.246	0.127	0.399
Banks	Competitive Nomination Process	**0.654**	0.493	0.794	0.329	0.164	0.498
Bollen et al.	Adult Suffrage (%)	−0.065	−0.124	0.008	**0.845**	0.768	0.916
Banks	Legislative Selection	0.026	−0.080	0.156	**0.844**	0.690	0.973
Polity	Openness of Executive Recruitment	0.043	−0.039	0.132	**0.755**	0.515	0.871
Vanhanen	Index of Participation	0.075	−0.030	0.147	**0.714**	0.632	0.827
	KMO	0.888	0.85	0.91			
	Eigenvalue	8.09	7.64	8.57	1.74	1.5	2
	% Variance	62.2	58.8	66	13.4	11.6	15.4
	correlation between components				0.477	0.403	0.575

Mean component weights with an absolute value greater than .500 are in bold.

dimension. One should not expect perfect correlations because many countries change their degree of democracy from one year to the next. But if the components are measuring the same dimension of democracy, then we would expect to find very strong correlations in proximate years and weaker correlations in more distant years. This is exactly the pattern found in Table 6: for each component, correlations in adjacent years are always highest (albeit lower for Inclusiveness due to its greater measurement error),

TABLE 5 Variables and Component Weights for the 1981–2000 Sample

		Component 1			Component 2		
Source	**Variable**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
Freedom House	Political Rights	**−0.922**	−0.976	−0.862	−0.008	−0.087	0.071
Freedom House	Civil Liberties	**−0.916**	−0.979	−0.824	0.047	−0.075	0.128
Polity	Competitiveness of Participation	**0.870**	0.802	0.932	0.041	−0.034	0.117
Polity	Executive Constraints	**0.868**	0.769	0.971	0.059	−0.097	0.204
Cheibub & Gandhi	Type of Regime	**−0.855**	−0.898	−0.788	−0.004	−0.085	0.065
CIRI	Freedom of speech	**0.838**	0.651	0.938	−0.123	−0.244	0.080
Vanhanen	Index of Competition	**0.832**	0.702	0.936	0.091	−0.027	0.220
CIRI	Freedom of assembly and association	**0.817**	0.696	0.874	0.002	−0.103	0.110
CIRI	Political participation	**0.802**	0.608	0.917	0.085	−0.045	0.320
Polity	Competitiveness of Executive Recruitment	**0.794**	0.627	0.913	0.144	−0.063	0.373
Bollen et al.	Adult Suffrage (%)	−0.039	−0.145	0.085	**0.861**	0.763	0.938
CIRI	Women's political rights	−0.015	−0.196	0.422	**0.724**	0.120	0.851
Vanhanen	Index of Participation	0.281	0.161	0.516	**0.591**	0.369	0.707
Polity	Openness of Executive Recruitment	0.197	0.028	0.461	**0.573**	0.227	0.892
	KMO	0.918	0.910	0.927			
	Eigenvalue	8.60	8.23	8.91	1.35	1.08	1.69
	% Variance	61.4	58.8	63.6	9.6	7.7	12.1
	Correlation between components				0.503	0.390	0.601

Mean component weights with an absolute value greater than .500 are in bold. CIRI is Cingranelli and Richards (2004).

TABLE 6 Mean Correlations among Principal Components by Years of Separation

Difference in Years	Contestation			Inclusiveness		
	1950–71	1972–88	1981–2000	1950–71	1972–88	1981–2000
1	0.966	0.977	0.969	0.897	0.913	0.919
3	0.916	0.927	0.915	0.707	0.722	0.802
5	0.881	0.887	0.863	0.617	0.586	0.714
7	0.864	0.856	0.814	0.591	0.510	0.651
9	0.848	0.847	0.761	0.577	0.477	0.614
11	0.835	0.833	0.714	0.582	0.446	0.580
13	0.815	0.820	0.691	0.548	0.417	0.551
15	0.806	0.775	0.681	0.547	0.382	0.520
17	0.805		0.671	0.584		0.488

"Difference in Years" is the number of years separating the estimates of contestation or inclusiveness whose correlations were averaged. For example, in the 1950–1971 sample, when the difference in years is 15, we averaged the correlations between the contestation estimates for 1950 and 1965, 1951 and 1966, 1952 and 1967, 1953 and 1968, 1954 and 1969, 1955 and 1970, and 1956 and 1971.

and they diminish as time passes and countries change. It is doubtful that anything but the close similarity of the dimensions being measured could produce such high adjacent correlations and their gradual diminution over time.[6]

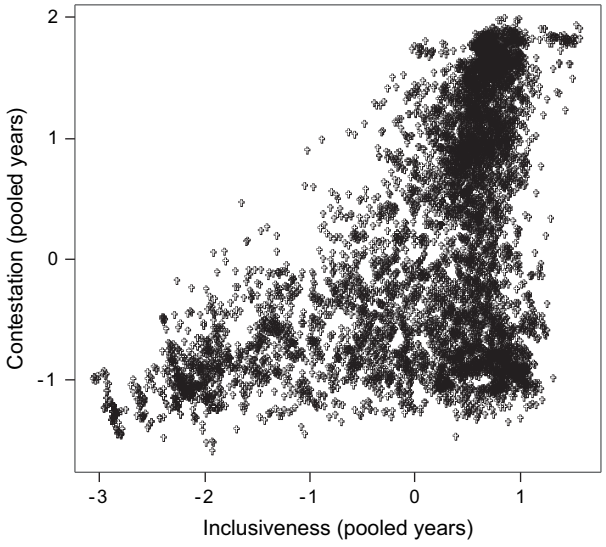
10. The tripolar distribution persists

The tripolar distribution of countries that we found for 1985 is reproduced in every other year from 1950 to 2000. Figure 2 is a scatterplot of the pooled annual component scores for all the countries in the two-dimensional spaces defined by the principal components for each year.[7] All of the annual plots are triangular within roughly the same space. Closer inspection would reveal that in every case, the democracies are in the upper right corner, the inclusive hegemonies in the lower right, and the authoritarian regimes and traditional monarchies are in the lower left. The three regime poles are persistent and clear.

11. The overall pattern persists even when individual countries change

The final piece of evidence confirming Dahl's conjecture is the stability of the tripolar distribution

FIGURE 2 Distribution of Countries in All Years

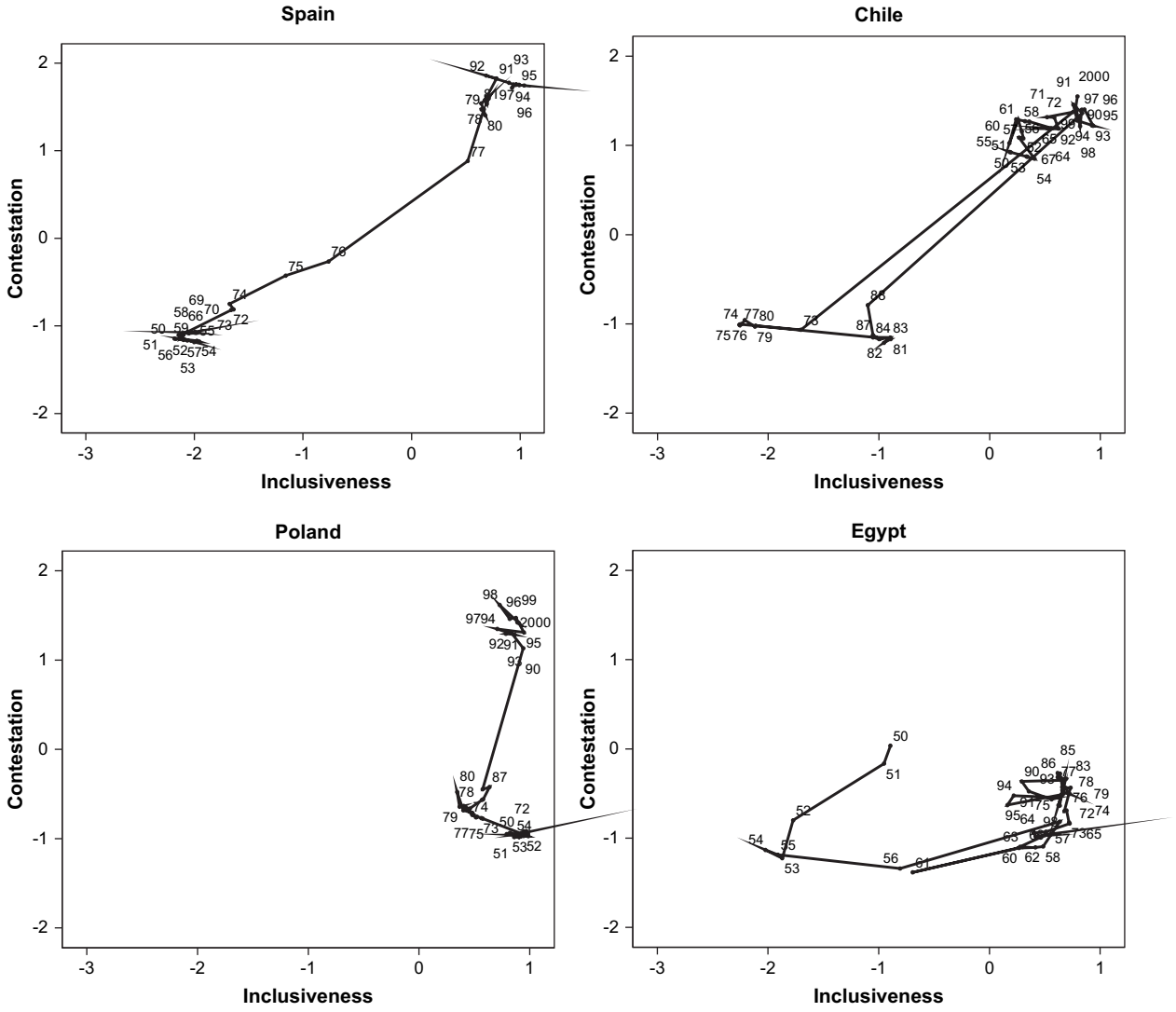


Note: Where samples overlap, the 1972–88 sample was used. All observations in this plot were standardized using the procedure described in note 7.

[6]Serially correlated measurement errors could produce a similar pattern, but only if (a) *most* of what these components are capturing were measurement error—otherwise the correlations would not be above .90 in adjacent years—and (b) the degree of error—for example, biases on the part of the many researchers who contributed to the construction of the variables—were amazingly consistent over several decades.

[7]These scores were standardized to make them comparable over time. This is necessary because the annual PCAs constrained the mean for each year to 0 and the standard deviation for each to 1, which obscured year-to-year variation in mean scores and their dispersion. We thank Carlos Gervasoni for pointing this out and suggesting part of the solution that we adopted. To correct for this problem, we repeated the PCA in each of the three pooled samples and calculated the means and standard deviations for contestation and inclusiveness by year. These means track the waves of authoritarianism and democratization in the 1960s and 1970s well. The standardized score on each dimension is then the original score multiplied by the annual standard deviation, plus the annual mean score. For the years with overlapping samples (1981–88), the means and standard deviations were chained forward from the 1981 scores based on the average changes in both samples, and from the 1988 scores based on the changes in the most recent sample. The correlations between original and standardized scores are at least .96 for both dimensions. Figure 2 looks very similar using either set of scores.

FIGURE 3 Paths Taken by Several Countries



despite the movements of the countries within it. If democracy is truly structured along the two dimensions that Dahl proposed, then these two dimensions should continue to capture the most fundamental aspects—the principal components—of regimes even when individual countries change regimes or their level of democracy. What remains to be shown is that some countries change their scores and positions in this two-dimensional space. It is also important to determine whether the countries' component scores change in ways that one would expect, knowing their political histories.

Figure 3 provides some of this evidence. It depicts the paths on which some well-known countries moved, according to the component scores estimated here. For example, Spain was located in the zone of the classic authoritarian regime before the death of Francisco Franco, but between 1975 and 1977 it moved quickly to the polyarchic inclusive-competitive pole, where it has remained ever since. Chile shows similar movement, but in both directions: in the polyarchic zone from 1950 to 1972, to authoritarianism under Pinochet from 1973 to 1988, and back to polyarchy in 1989 to 2000. Poland stays inclusive throughout our sample period, even under Communist rule, but experienced increasing contestation, most dramatically in 1989. Finally, Egypt's path headed into authoritarianism with the 1952 Free Officers coup installing Naguib; but under Nasser (1954–70), it moved to the more inclusive pattern of holding elections with limited contestation—the pattern that persisted under Sadat and Mubarak.

Many other examples could be shown, but the point should be clear: the component scores reflect these changes faithfully and yet the overall distribution remains very similar.

Conclusions

Democracy is a complex, multifaceted concept: so complex that it has to be simplified before it can be measured and subjected to empirical analysis. Dahl proposed one simplification: a focus on certain aspects of democracy that he called polyarchy, which he claimed had two dimensions. Our analysis gives an empirical foundation to Dahl's two theoretical dimensions of democracy. There are two dimensions, they are the same dimensions about which Dahl theorized, and they have been remarkably persistent for a large number of countries for several decades. On both theoretical and empirical grounds, therefore, there is a strong presumption in favor of the heuristic and empirical value of treating democracy as possessing these two dimensions, at least for the latter half of the twentieth century.

Some of our 11 tests are less rigorous than others, i.e., they admit different interpretations. However, the tests reinforce one another and are collectively more rigorous than any one test in isolation. The logic is the same as that of the familiar "duck" analogy: a puffin can walk like a duck, a hunter's call can quack like a duck, and a decoy can look like a duck; but if a creature walks, talks, *and* looks like a duck, it is a duck. After passing *11* tests, the evidence that these are Dahl's two dimensions is solid.

One caveat is that our findings necessarily reflect the aspects of democracy measured by the indicators included in our analysis, which are in turn limited to the aspects that other scholars have chosen to measure. An exploratory analysis of a more diverse set of variables could well reveal three or more dimensions. We do not claim that contestation and inclusiveness capture everything there is to know about democracy. In fact, we are persuaded that it would be useful to define and measure its other dimensions if this becomes possible. Based on the evidence at hand, however, the only two robust dimensions in the available indicators are Dahl's dimensions of contestation and inclusiveness, and these two dimensions account for about three-quarters of the variation captured by the indicators that have been produced by those who have measured aspects of democracy most extensively—Banks, Gurr et al., Freedom House, Vanhanen, and Przeworski et al.

Our analysis provides criteria for evaluating some existing indicators of democracy. According to our findings, Gurr's Openness of Executive Recruitment measures a different dimension than the other Polity variables. This suggests that combining these indicators into a summary Polity score results in an index with greater measurement error and reinforces the conclusion of Gleditsch and Ward that the aggregated *Polity Index* is less useful than the separate variables that compose it (Gleditsch and Ward 1997). The opposite problem faces Freedom House, which has always produced separate indices for "political rights" and "civil liberties" even though, as our analysis shows, these are both indicators of contestation. This is therefore a conceptual distinction without an empirical difference. No researcher should use them as indicators of distinct aspects of democracy.

A final implication of our study is that most quantitative research on democratization has actually concerned contestation. This can be seen in the fact that the most commonly used indicators of democracy—most of the Polity Index and both Freedom House indices—load on the contestation dimension. Therefore, the inclusiveness dimension has been neglected. One of the limitations of studying inclusiveness is that it has been operationalized very narrowly, almost always being reduced to the breadth of the suffrage. Our inclusiveness component is based on several indicators in addition to the extent of the suffrage. The fact that there continued to be significant variations in this component as recently as 2000 suggests that inclusiveness continues to be a relevant dimension of democracy despite the near-universal adoption of universal adult suffrage in countries that hold elections. There is practically no research on the causes of inclusiveness; our indicators will make this new avenue of research possible.[8]

[8]Our component scores are available for other scholars to use at http://www.nd.edu/~mcoppedg/crd/.

Appendix Variables and Their Sources

Variable	*Variable Label*	*Source*
compet*	Competitive Nomination Process	Banks 1979 and later editions
effect*	Effective Executive Selection	
leg*	legef*legsel	
legef*	Legislative Effectiveness	
legsel*	Legislative Selection	
party*	Party Legitimacy	
suff*	Adult Suffrage (percentage)	Bollen, Jackman, and Kim 1996
fh_cl	Civil Liberties	Gastil various; McColm 1990
fh_pr	Political Rights	
p_xrco	Competitiveness of Executive Recruitment	Gurr 1990
p_xcon	Executive Constraints (Decision Rules)	
p_xrop	Openness of Executive Recruitment	
p_parc	The Competitiveness of Participation	
van_co	Competition	Vanhanen 1990
van_pa	Participation	
chga_r	Type of Regime	Cheibub and Gandhi 2004
ciri_a	Freedom of Assembly and Association	Cingranelli and Richards 2004
ciri_s	Freedom of Speech	
ciri_p	Political Participation	
ciri_w	Women's Political Rights	

*These variables were taken from Bollen's compilation, which rescaled them to a (0,10) interval, with 10 indicating greater democracy.

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