# An Integrated Model of Women's Representation 

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#### Abstract

The concept of representation, as developed in Hanna Pitkin's seminal work, is a complex structure, whose multiple dimensions are hypothesized to be closely interconnected. Most empirical work, however, ignores the integrated character of representation and examines its several dimensions in isolation. The picture of representation that results is not so much incorrect as incomplete. This research tests an integrated model of representation linking formal, descriptive, substantive, and symbolic representation. Data on the representation of women in 31 democracies confirms the interconnections among the several dimensions of representation. The structure of electoral systems exerts powerful influences on both women's descriptive representation and symbolic representation. Descriptive representation, in turn, increases legislatures' responsiveness to women's policy concerns and enhances perceptions of legitimacy. The effects of substantive representation, however, are much less than theory anticipates.


The concept of representation is a rich brocade whose complex weave is not always appreciated. Hanna Pitkin's (1967) seminal treatment identifies four distinct, but interconnected meanings or dimensions of representation including: formal representation, referring to the institutional rules and procedures through which representatives are chosen; descriptive representation, referring to the compositional similarity between representatives and the represented; substantive representation or responsiveness, referring to the congruence between representatives' actions and the interests of the represented; and symbolic representation, referring to the represented's feelings of being fairly and effectively represented. While there are important differences among the four dimensions, Pitkin (1967, 10-11) maintains that they are properly conceived as integral parts of a coherent whole. Yet, despite the frequency and approval with which Pitkin's work is cited, most empirical work on representation ignores her integrated conception. Scholars, typically, choose one or two aspects of representation while ignoring others that are not of interest or for which data are lacking. This not only contributes to a "blind man's understanding of the elephant" but also fails to provide an adequate empirical test of a fundamental aspect of Pitkin's conception: its integrated structure.

This research redresses this neglect by developing and testing an integrated model of Pitkin's four dimensions of representation using cross-national data on the representation of women. Women provide an ideal focus for testing an integrated theory for three reasons. First, women are a large and easily identifiable group whose members possess many and varied political interests but also are widely perceived as sharing some common, identifiable "women's interests" (Sapiro 1981). ${ }^{1}$ Second, although women's representation has improved markedly in recent years, women remain underrepresented in most countries according to many definitions and measures. Third, while many minority groups also have identifiable interests and are widely underrepresented, it is much more difficult to compare them systematically because these groups are so varied; a group that is a minority in one country can be a majority in another and absent altogether in a third. Women, however, constitute approximately $50 \%$ of the population virtually everywhere.

We begin this analysis by elaborating Pitkin's concept of representation and developing an integrated model of its several dimensions and their interrelationships. We proceed to operationalize the model using data on the representation of women across a broad cross-section of democratic systems. Structural equation methods are used to test the validity of the multidimensional conception of representation and to refine its structure. Finally, we use the results to discuss both the structure of representation, generally, and the dynamics of women's representation in particular.

## The Multidimensional Concept of Representation

The fundamentals of Pitkin's concept of representation are well known. Pitkin conceives of representation as having four primary dimensions. Formal Representation focuses on the rules and procedures regulating the selection and removal of representatives. Variants include accountability theory, which refers to rules and procedures allowing the represented to sanction representatives, ex post, who fail to act as the represented desire, and authorization theory, which refers to the ability of the represented, ex ante, to provide mandates to representatives. While the existence of free and fair elections are not a necessary condition for formal representation, in practice elections are considered critical and underlie most attempts to operationalize this dimension (see Powell 2000).

Descriptive representation, or "representativeness," refers to the extent to which representatives "stand for" the represented. Typically, this means that the composition of representative institutions should mirror the composition of the represented in important respects. Varieties include functional representation,

[^0]which focuses on the occupational correspondence between representatives and represented, and social representation, which concerns social characteristics such as gender, race, ethnicity, and class (Norris and Franklin 1997). Descriptive representation arguably is the most studied of Pitkin's four dimensions partly because the composition of the legislature is highly visible and easily measured.

Substantive representation is defined as "acting in the interests of the represented in a manner responsive to them" (Pitkin 1967, 209). Although Eulau and Karps (1977) identify a variety of ways that representatives may act on behalf of the represented, the most common interpretation is that substantive representation refers to policy responsiveness or the extent to which representatives enact laws and implement policies that are responsive to the needs or demands of citizens. ${ }^{2}$ While Pitkin considers substantive representation to be the most important dimension of representation and the heart of the integrated model, others question its priority. For example, Wahlke (1971) argues that policy responsiveness receives too much emphasis given evidence that citizens possess few coherent policy beliefs and that legislators are poorly informed about the policy preferences of citizens except in exceptional cases. Nevertheless, policy responsiveness continues to be considered the central aspect of representation by numerous scholars, a variety of whom have attempted to measure policy responsiveness both to overall public interests (for example, Miller and Stokes 1963; Miller et al. 1999; Stimson, Mackuen, and Erikson 1995; Thomassen and Schmitt 1997) and to race- and gender-based interests (for example, Bullock 1995; Hero and Tolbert 1995; O’Regan 2000; Reingold 2000).

Finally, symbolic representation refers to the extent that representatives "stand for" the represented with an emphasis on symbols or symbolization. Pitkin provides the example of a flag as a symbol representing a nation. What matters is not the symbol itself, but "the symbol's power to evoke feelings or attitudes" (Pitkin 1967, 97). Symbolic representation is concerned not with who the representatives are or what they do, but how they are perceived and evaluated by those they represent. Wahlke (1971) embraces symbolic representation as the most realistic standard given the constraints he perceives on policy responsiveness (see also Anderson and Guillory 1997; Hibbing and Theiss-Morse 1999; Mishler and Rose 1997, 2001).

While Pitkin's multifaceted conception is well known and widely cited, the connections among its dimensions are frequently ignored in practice. Even research acknowledging the multidimensional nature of representation and focusing on more than one dimension typically treats those dimensions as separate and distinct (see, for example, Marsh and Norris 1997; Mishler and Mughan 1978). Pitkin argues against separating the dimensions on two grounds. First, she chal-

[^1]lenges the representative quality of institutions that manifest one or even several dimensions of representation but are substantially lacking the others. She argues, for example, that a benevolent dictatorship should not be considered representative simply because the dictator adopts policies that provide for citizens' basic needs (1967, 230-35). Neither should a legislature to be considered representative because it "looks like" the public nor because citizens express approval for it. To be representative, an institution must achieve some minimum on all dimensions of representation.

Second, Pitkin argues that strong causal connections exist among the components of representation. Advocates of formal representation emphasize that free, fair, and open elections are important not only because they are necessary for democracy (Powell 2000; Schumpeter 1947) but also because they facilitate descriptive representation, encourage policy responsiveness, and enhance the public's support for representative institutions. Similarly, descriptive representation is considered important for promoting symbolic representation and policy responsiveness, while policy responsiveness is believed to be a principal contributor to symbolic representation (Mishler and Rose 1997). It is for both of these reasons that the concept of representation is considered integrated.

## An Integrated Model of Representation

Figure 1 diagrams an integrated model showing hypothesized linkages among the four principal dimensions of representation. According to this framework, the structure of the electoral system (formal representation) is exogenous and directly influences descriptive representation (link A in the model), substantive representation (link B), and symbolic representation (link C). ${ }^{3}$ The theory is that political systems with more open and competitive elections will elect representatives whose backgrounds more closely resemble those of the represented. Such political systems also will produce more responsive policies which will increase citizens' confidence in representative institutions. Formal representation also has indirect effects on policy responsiveness through the mediating effect of descriptive representation (compound link A-D) and on symbolic representation via multiple paths (links A-E, B-F, and A-D-F). Figure 1 further hypothesizes that descriptive representation contributes directly to substantive representation by producing policies more responsive to societal interests (link D). Descriptive rep-

[^2]FIGURE 1
An Integrated Model of Political Representation

resentation enhances public confidence in representative institutions (symbolic representation) both directly (link E) and through the mediating influence of more responsive policies (link D-F). Finally, policy responsiveness is hypothesized to have direct effects on symbolic representation (link F) consistent with theories holding that public trust in representative institutions varies in relation to the production of public policies that are congruent with public interests.

Relatively little empirical research examines representation as a whole, but there are several literatures, some quite extensive, that examine individual strands.

THE FORMAL-DESCRIPTIVE LINK. A substantial literature testifies to the impact of electoral rules and procedures on descriptive representation (Powell 2000; Rae 1967; Taagepera and Shugart 1989, among many others). Among the most critical features in this regard is the number of legislative seats in electoral districts (Duverger 1954; Lijphart 1994; Taagepera and Shugart 1989). District magnitude is important, in part, because it is a principal determinant of the effective number of parties in a political system. ${ }^{4}$ This influences both the extent of electoral competition and the strength of minority parties, who are more likely to nominate women and minority candidates (Jones 1993; Mainwaring and Shugart 1997; Rule 1987; Taagepera and Shugart 1989). District magnitude also facilitates diversity in legislatures, since political parties are more likely to "risk" the nomination of nontraditional candidates (i.e., women and minorities) for the nth seat in multimember districts rather than for the only seat in single member districts (Matland and Brown 1992; Rule 1987). Empirically, extensive research confirms that electoral systems with greater proportionality and higher district magnitudes elect larger percentages of women to legislatures when other factors are con-

[^3]trolled (Darcy, Welch, and Clark 1994; Duverger 1955; Matland and Studlar 1996; Norris 1985; Rule 1987; see, however, Welch and Studlar 1990).

THE FORMAL-SUBSTANTIVE LINK. The hypothesis that formal electoral rules influence policy responsiveness also is widely supported (see, for example, Miller et al. 1999; Stokes 2001). Powell (2000) demonstrates, for example, that more proportional systems generally experience higher levels of policy congruence between voters and governments than do more majoritarian electoral systems, and Miller et al. (1999) concurs. Less research connects electoral rules to the substantive representation specifically of women. Still, given that the median citizen in most democracies is female and that the interests of women traditionally have been underrepresented, it is reasonable to expect that women's interests should benefit as electoral rules and procedures push government policy in the direction of the median citizen.

THE FORMAL-SYMBOLIC LINK. The impact of electoral rules and procedures on symbolic representation also has been relatively neglected. Nevertheless, the available evidence sustains the hypothesis that support for representative institutions varies with the extent of political competition and choice provided by electoral systems (Anderson and Guillory 1997). Norris (1999) reports, for example, that public support for legislatures is significantly higher in multiparty and parliamentary systems, and Anderson and Guillory (1997) demonstrate that support for democratic institutions is higher in proportional as compared to majoritarian political systems.

The usual hypothesis regarding women is that they should express less trust than men given that legislatures traditionally are male bastions. Hibbing and Theiss-Morse (1995) report, however, that American women express greater trust in Congress than do men, and Norris (1985) obtains similar results cross-nationally. This raises questions about the utility of egocentric models of political behavior and recalls the continuing debate about egocentric versus sociotropic models of voting (see, e.g., Kinder and Kiewiet 1979; Lewis-Beck 1988). While egocentric models reflect the traditional belief that individuals operate "selfishly" and are motivated largely by individual self-interest, sociotropic models assume a more "enlightened" self-interest in which individuals recognize that their personal fortunes depend on the fortunes of the group. From a sociotropic perspective, individual interests are more likely to be evaluated in positive-sum terms. Thus, electoral rules increasing the representation of women in the legislature may be embraced by women egocentrically because of the expected impact of those rules on the descriptive representation of women. However, they also may be valued sociotropically by men and women because those rules are conducive to more equal representation of all groups in the political system, including but not limited to women.

Separating the potential egocentric and sociotropic effects of formal representation on symbolic representation in this model involves distinguishing direct from indirect effects. To the extent that formal representation is important ego-
centrically, then its effects on symbolic representation should vanish or at least be significantly attenuated when descriptive representation and policy responsiveness to women's issues are controlled. Conversely, the sociotropic effect of formal representation can be measured simply as the direct effect of formal on symbolic representation that persists when descriptive and policy representation are controlled. The difference between the egocentric and sociotropic effects of formal representation on legislative legitimacy also should be manifest in gender differences. If women's confidence in the legislature is influenced by egocentric assessments of the representativeness or responsiveness of the system to women and their interests, then women's confidence in the system should be strongly and positively affected by variations in formal representation while men's confidence in the system should be either unaffected or negatively affected.

THE DESCRIPTIVE-SUBSTANTIVE LINK. One of the most widely studied hypotheses regarding representation holds that variations in descriptive representation have substantial effects on policy responsiveness. John Stuart Mill argued more than a century ago that, "in the absence of its natural defenders, the interest of the omitted is always in danger of being overlooked; and when looked at, is seen with very different eyes from those of the persons whom it directly concerns" (1967, 22; chapter 3). Pitkin makes the same point reasoning that it is only logical "to expect the composition [of a legislature] to determine the activities" (1967, 63). The literature on women's representation confirms the importance of descriptive representation for women's policy responsiveness. Several studies have found strong links between increasing the percentage of female legislators and women's policy outputs (Bratton 2002; Reingold 2000; Swers 2002; Thomas 1991), although the effects appear to be limited to women's issue areas and often are observable only within political parties (Swers (2001) provides a good review).

While much of the literature assumes a linear relationship between the proportion of female representatives and the production of women-oriented policies, Kanter (1977) hypothesizes a threshold effect. She argues that there is likely to be only a modest relationship between the number of women in the legislature and policy responsiveness until women's representation reaches a critical mass. Beyond that threshold, Kanter speculates, women's interests will begin to diffuse broadly among all members of the assembly resulting in accelerated responsiveness to women's policy concerns. A recent study supports this hypothesis with regard to the impact of women's descriptive representation on child care policy in Norway (Bratton and Ray 2002). To date, however, little empirical work has been produced in support for the threshold hypothesis, perhaps because of the small number of legislatures where the proportion of female legislators is large enough to constitute a critical mass.

THE DESCRIPTIVE-SYMBOLIC LINK. Even where female legislators do not advocate a distinctly "female agenda" or respond to women's policy concerns, a visible presence of women in the legislature may still enhance women's confidence in the legislative process. The hypothesis is that constituents are more likely to iden-
tify with the legislature and to defer to its decisions to the extent that they perceive a significant percentage of "people like themselves" in the legislature (Mansbridge 1999; Phillips 1995). For women, this means that increases in the proportion of female legislators should increase the legitimacy of the legislature as perceived by female constituents. The evidence on this point is limited but generally supportive of the expectation (Norris and Franklin 1997).

Again, different egocentric and sociotropic effects of descriptive representation should be manifest in gender differences in support for the legislature. To the extent that men and women assess the legitimacy of the legislature egocentrically, then there ought to be significant differences in the effects of descriptive representation on male and female confidence in the legislature. Conversely, to the extent that the effects of descriptive representation are sociotropic, we would expect higher percentages of women in the legislature to have similar effects on both male and female confidence in the legislature.

THE SUBSTANTIVE-SYMBOLIC LINK. For Pitkin and many others, substantive representation or policy responsiveness is the vital core of what representation means and is the heart of the integrated model. Formal and descriptive representation is considered important in large part because of their hypothesized effects on policy responsiveness. Policy responsiveness also is considered key to the legitimacy or symbolic representation of the legislature. This is consistent with both neo-institutional and rational actor theories which hold that citizens' support for political institutions depends largely on citizen evaluation of an institution's performance (Jackman and Miller 1996; Mishler and Rose 2001; Powell 2000).

As this discussion demonstrates, there are numerous and complex causal connections hypothesized in an extensive literature to exist among the several dimensions of representation. As a result, attempts to extract any one linkage from the network and examine it in isolation raise serious, though usually unrecognized problems of model misspecification. For example, much of the work demonstrating a causal connection between descriptive and substantive representation is misspecified because it fails to control for the hypothesized, antecedent effects of formal representation on both descriptive and substantive representation. This means that the apparent effects of descriptive representation on substantive representation may be spurious, either wholly or in part. Similarly, studies showing that substantive representation contributes to symbolic representation are misspecified unless they control for both descriptive and formal representation. Proper estimation of these relationships requires a fully specified, integrated model.

## Measures and Methods

To test the integrated model we use aggregate data on the representation of women in the mid-1990s in 31 countries. ${ }^{5}$ Countries were chosen based on data

[^4]availability and democratic status. The justification for the first of these is selfevident. While data on formal and descriptive representation are widely available, data on policy responsiveness and on public confidence in representative institutions are in short supply. Thus, we have constructed what is, in essence, an "opportunity sample" of countries for which we were able to assemble relatively complete data on all four dimensions of political representation. We also limit our analyses to countries that are considered "free" according to the Freedom House indices of civil and political freedoms. ${ }^{6}$ While Pitkin (1967, 2-3) acknowledges that democracy and representation are not synonymous, she argues that political representation and democracy are closely linked. Formal representative structures may exist in nondemocracies, but they are usually subsumed by authoritarian leaders and do not operate as functioning representative institutions. Therefore, there is little reason to examine representation in nondemocratic states. ${ }^{7}$

Data used in the analysis consist of three measures of formal representation including district magnitude, parliamentary versus presidential systems and single-member district versus proportional representation systems (the appendix provides descriptions, means, standard deviations, and sources for all variables). Descriptive representation is measured simply as the percentage of women in the lower house of the national legislature.

Measuring policy representation proved more challenging both because the available measures of this concept are highly subjective and because there is a checker-board pattern of missing data for the different measures. To compensate for the potential bias in any single measure, we employ four indicators measuring gender equality in political rights, gender equality in social rights, national maternity leave policy, and gender equality in marriage and divorce laws. ${ }^{8}$ While these measures in no way exhaust the range of issues that might be considered
lands, Norway, Poland, Portugal, South Africa, South Korea, Slovenia, Spain, Sweden, Switzerland, Uruguay, and United States.
${ }^{6}$ Specifically, we limit the analysis to countries with average scores between 1 and 2.5 on the separate, 7 -point Freedom House scales of civil liberties and political rights; where lower scores indicate greater freedom (http://www.freedomhouse.org/ratings/index.htm).
${ }^{7}$ We experimented with the inclusion of a nearly equal number of "unfree" countries in preliminary tests of the model. Unlike the clear pattern reported below for democratic regimes, virtually no significant relationships were found to exist among the different dimensions of representation in undemocratic systems. Moreover, the inclusion of undemocratic regimes severely confounded the results and caused the model for democratic regimes effectively to collapse. The decision to focus only on democratic regimes is supported both by theory and evidence.
${ }^{8}$ Ideally a measure of policy responsiveness should assess congruence between legislative outputs and the interests (needs or demands) of the represented. Unfortunately, cross-national measures of public opinion in specific policy areas are largely unavailable, as are reliable measures of public needs. Lacking cross-national data on women's policy needs or demands, we make the heroic assumption that women share a number of policy interests cross-nationally and that we can measure responsiveness by focusing solely on legislative outputs on issues we assume to be especially salient to women. To compensate for the lack of data on women's policy demands, we include a control variable measuring public attitudes toward women's roles in society as discussed in detail below.
women's issues, they do provide an indication of policy responsiveness on some key issues of particular importance to many women. To measure symbolic responsiveness, we use aggregated World Values Survey (1995-97) data from a question about citizen confidence in the legislature. Separate measures of women's and men's confidence in the legislature are calculated as the percentage of each group in each country responding that they had "a great deal of confidence" or "quite a lot of confidence" in that country's legislature. ${ }^{9}$

In addition to modeling the four dimensions of representation, it is important to control for exogenous factors that threaten the validity of observed linkages. Because of the small number of cases in our sample, however, we had to be economical in our choice of controls. Therefore, we experimented with several different candidates including the percentage of women in the workforce, per capita Gross Domestic Product, and a series of variables aggregated from the World Values Survey measuring public attitudes toward the roles of women in society. ${ }^{10}$ The several controls were highly correlated, however, and the choice of controls had very little effect on the overall structure of the model. Thus, we rely on a single, composite variable reflecting cultural attitudes toward the role of women in society (see Table 1 and the appendix for details). We treated this feminist attitudes variable as exogenous, hypothesizing that it is causally prior to the other dimensions of representation including the percentage of women in parliament, policy responsiveness to women's concerns, and women's confidence in parliament. Inclusion of this control is important for ensuring that any linkages observed among the components of representation are causal and not spurious artifacts of broader cultural attitudes and values.

## Model Estimation

Structural equation modeling (SEM) procedures are used to estimate the integrated model. These permit the simultaneous estimation of a complex causal model and of a series of measurement models for the principal concepts or "latent variables" (in this case, feminist attitudes, formal representation, and policy responsiveness) that are measured with multiple indicators. The statistical package used for the analysis, AMOS (Arbuckle and Wothke 1995), calculates Full Information Maximum Likelihood (FIML) estimates. Among other benefits,

[^5]TABLE 1
Measurement Models of Feminist Attitudes, Formal Representation, and Substantive Representation

| Latent Variables/Measures | Loading | Standard Error | Standardized Loading |
| :--- | :---: | :---: | :---: |
| Feminist Attitudes |  |  |  |
| $\quad$ University More Important for Men | -1.00 |  | -.75 |
| Women Need Children | $-3.23^{*}$ | .90 | -.97 |
| Women Earning More a Problem | $-.77^{*}$ | .31 | -.58 |
| Formal Representation |  |  |  |
| $\quad$ District Magnitude | 1.00 |  | .67 |
| PR vs. SMD | $.04^{*}$ | .01 | .76 |
| Presidential vs. Parliamentary | -.02 | -.02 | .23 |
| Substantive Representation |  |  |  |
| Weeks of Maternity Leave | 1.00 |  | .62 |
| Women's Political Equality Index | $.04^{*}$ | .02 | .79 |
| Women's Social Equality Index | $.03^{*}$ | .01 | .48 |
| Marital Equality in Law | $.04^{*}$ | .02 | .49 |

Notes: Analyses are confirmatory factor analyses.

* $p \leq .05$.
$\mathrm{N}=31$.
See Appendix A for variable coding and sources.
these provide a superior method for handling missing data than is typically available when Ordinary Least Squares estimators are employed (Kline 1998).

The first concern in the analysis is the validity of the measurement models for the latent concepts. Consistent with expectations, the model for feminist attitudes in Table 1 suggests that the several measures load strongly on a single latent variable. Countries scoring high on one indicator of feminist attitudes score high on all of the others as well. All three indicators are statistically significant, and all are negatively signed so that positive scores indicate greater societal support for feminist values. ${ }^{11}$

The measurement model for women's policy responsiveness includes four variables all of which load substantially on a single dimension. All of the loadings are statistically significant and their standardized coefficients range from .48 , for a variable measuring women's social equality, to .79 for the variable measuring the political equality of women. The mean loading for the four variables is .60 , which is especially impressive given the small number of cases, the

[^6]TABLE 2
Structural Equations Estimates of an Integrated Model of the Political Representation of Women

|  | Coefficient | Standard Error | Standardized <br> Coefficient |
| :--- | :---: | :---: | :---: |
| Variables |  |  |  |
| Descriptive Representation $\mathrm{R}^{2}=.52$ | $.72^{*}$ | .31 | .48 |
| $\quad$ Proportional Electoral Systems | 1.06 | 3.86 | .05 |
| Presidential vs. Parliamentary Systems | $-82.7^{*}$ | 29.70 | -.54 |
| Feminist Attitudes |  |  |  |
| Substantive Representation R ${ }^{2}=.83$ | -.82 | .52 | -.86 |
| Proportional Electoral Systems | -1.79 | 3.15 | -.12 |
| Presidential vs. Parliamentary Systems | $.56^{*}$ | .28 | .88 |
| Percentage of Female Legislators | -.09 | 28.10 | -.01 |
| Feminist Attitudes |  |  |  |
| Symbolic Representation R ${ }^{2}=.27$ | $.07^{*}$ | .01 | .38 |
| Proportional Electoral Systems | -.02 | .07 | -.07 |
| Presidential vs. Parliamentary Systems | .002 | .002 | .16 |
| Percentage Female Legislators | -.002 | .02 | -.09 |
| Women's Policy Responsiveness | -.36 | .56 | -.19 |
| Feminist Attitudes |  |  |  |

Notes: Estimates are Full Information Maximum Likelihood Estimates.

* $\mathrm{p} \leq .05$.
$\mathrm{N}=31$.
See Appendix A for variable coding and sources.
subjective nature of these indicators, and the missing data in several of these measures.

In contrast to feminist attitudes and women's policy concerns, the three measures of formal representation do not fit a single dimension. While the two indicators of electoral system proportionality (district magnitude and PR vs. SMD) are closely related, the standardized loading of the variable distinguishing presidential and parliamentary systems is very weak (only .23). Based on this, we revised the model to include two measures of formal representation: a latent variable measuring electoral proportionality and the observed variable distinguishing presidential and parliamentary systems.

Table 2 reports initial estimates of the fully specified, integrated model of the political representation of women across 31 democratic countries. The diagnostics at the bottom of the table demonstrate that the model fits the data fairly well. ${ }^{12}$

[^7]The estimated model represents a significant improvement over the null model in which all variables are assumed to be unrelated, and it closely approximates the fit of a "saturated model" in which all possible linkages are specified. More importantly, the estimated model accounts for one-quarter to one-half of the variance in each of the three endogenous dimensions of representation.

Despite the model's overall "goodness of fit," a number of individual linkages are weak or insignificant. Feminist attitudes have strong and significant effects on the percentage of women serving in national legislatures, but they do not have significant effects either on women's policy responsiveness or on women's perceptions of legislative legitimacy when other variables in the model are controlled. Similarly, formal representation has important effects, consistent with theory, on the percentage of female legislators but not on substantive representation. ${ }^{13}$ Given the large number of variables in the analysis and the small sample size, statistical degrees of freedom are precious; even small changes in the model can significantly alter model estimates. Therefore, it is important to correct the model specification based on the initial results and to reestimate a properly specified, reduced form of the model using the extra degrees of freedom. The results, reported in Figure 2, confirm both that the overall fit of the model is improved and multicollinearity among the estimates is eliminated.

Importantly, the structure of the revised model largely confirms expectations regarding the integrated nature of political representation, albeit with several important exceptions to Pitkin's theory. Consistent with the hypothesis that formal representation contributes to descriptive representation, the revised model clearly demonstrates that PR electoral systems and those with higher district magnitudes elect significantly larger percentages of female legislators. The effect is strong (.56), positive and direct. This is the case, moreover, even after controlling for the strong, positive effects (.51) that feminist attitudes have on the election of female legislators.

Also consistent with the integrated model, the percentage of female legislators has a substantial and statistically significant effect (.42) on the responsiveness of legislatures on women's issues. This effect persists even when controls are introduced for public attitudes toward women (and, alternatively, for GDP per capita and the percentage women in the work force). Even in countries with comparable economies and similar attitudes about women, legislatures are more responsive to women's issues when there are more women in legislature.

[^8]FIGURE 2
Reduced Form Structural Equation Model of Women's Representation


The proportionality of the electoral system also has substantial, albeit indirect, effects on women's policy responsiveness. ${ }^{14} \mathrm{PR}$ systems tend to elect more female legislators whose greater numbers facilitate the enactment of more women's legislation, other things being equal. Electoral proportionality, however, does not have independent effects on substantive representation; the effects of formal representation are fully mediated through descriptive representation. Although electoral proportionality encourages the election of a more diverse legislature, this diversity may impede the formation of a governing majority. Indeed, a substantial literature debates the characteristic strengths and weaknesses of the two types of systems in this regard (Lijphart 1994; Powell 2000). Consistent with this suggestion, the simple correlation between electoral proportionality and women's policy responsiveness is negative, although the correlation is weak and not significant.

Additional support for the integrated conception of representation is provided by the observation that formal representation has a statistically significant and substantial effect on women's confidence in the legislature (symbolic representation). Importantly, however, neither descriptive representation nor policy

[^9]responsiveness has appreciable effects in this regard. ${ }^{15}$ The failure of policy responsiveness to influence symbolic representation is especially problematic given Pitkin's emphasis on policy responsiveness as the centerpiece of the integrated model.

The absence of direct links between descriptive and substantive representation on the one hand and symbolic representation on the other admits several possible explanations. First, it may result from the choice of policy areas included in the measure of women's policy responsiveness. The influence of policy responsiveness on women's confidence in the legislature may be greater for other women's issues such as abortion rights or domestic violence legislation. Second, while policy responsiveness may be the central aspect of representation from a normative perspective, it may be less important empirically. Given the low levels of political knowledge characteristic of citizens in most democratic polities, many citizens simply may not have the knowledge to accurately judge the policy responsiveness of the system. Third, even when citizens can assess the quality of policy responsiveness, it may be difficult for them to apportion responsibility for policy responsiveness among the executive, legislature, bureaucracy, and courts. Lacking data on most of these matters, we can only speculate about the lack of relationship between policy responsiveness and women's confidence in legislatures.

NONLINEAR EFFECTS. The absence of a substantial relationship between descriptive representation and symbolic representation (. 13 in Figure 2) also may indicate model misspecification. As noted, the literature anticipates the possibility of a nonlinear relationship between the percentage of women in a legislature and policy responsiveness (Kanter 1977). One possibility is that a critical mass of women must be elected to the legislature before the power of women reaches a threshold sufficient to affect legislation; another possibility is the existence of a multiplier effect whereby the power of women increases exponentially with women's increasing presence in the legislature. The logic of this argument might well be extended to symbolic representation as well. Women may be more likely to accept the legislature as legitimate only after the percentage of female legislators crosses some critical threshold.

To test these possibilities we estimated several alternative specifications of the relationship between the percentage of female legislators and both policy responsiveness and symbolic representation (Table 3). First, we created a crude test of the threshold hypothesis using a dummy variable coded " 1 " for those legislatures with more than the average (i.e., $15 \%$ ) percentage of women in the legislature ${ }^{16}$

[^10]
## TABLE 3

# The Effects on Policy Responsiveness and Symbolic Representation (Standardized Maximum Likelihood Estimates) of Different Specifications of the Percentage of Female Legislators 

| Variable/ <br> Specification | Women's Policy <br> Responsiveness | Women's Confidence <br> in Legislature |
| :--- | :---: | :---: |
| Simple Linear Function of \% Women in Legislature ${ }^{\mathrm{a}}$ | .42 | .13 |
| Threshold Effect of \% Women (Legislatures with <br> over 15\% Women members) | .17 | .05 |
| Natural Log of \% Women in Legislature <br> Squared \% Women in Legislature $^{\mathrm{c}}$ | .31 | .02 |

Notes:
a: $\mathrm{Y}=\mathrm{a}+\mathrm{b} x$ (linear effect).
b: $\mathrm{Y}=\log (x)$ (logarithmic effect).
c: $\mathrm{Y}=\mathrm{a}+\mathrm{b} x^{2}$ (quadratic effect).
See Appendix A for variable coding and sources.
and " 0 " for all others. A second specification tests the possibility that the impact of women follows a logarithmic function according to which the impact of the percentage of women accelerates to a threshold point and then decelerates (increases more slowly) above the threshold. A third specification uses the squared percentage of women in the legislature ( $Y=a+b x^{2}$ ). Similar to the logarithmic function, this assumes that the impact of women accelerates as their numbers grow but without a threshold or deceleration point. Given the small percentage of women in most legislatures, this allows for the possibility that women in most legislatures have not yet reached a critical mass or tipping point.

While neither of the first two alternative specifications (rows 2 and 3 of Table 3) provides significant improvement over a simple linear function (row 1), the third specification (row 4) works very well. It increases the impact of descriptive representation on policy responsiveness from .42 to .54 , and it almost triples the impact on symbolic representation from .13 to .38 . While this does not directly support Kanter's specific hypothesis regarding a critical mass or threshold effect, it does support the related but more general argument that the impact of female legislators accelerates as their numbers in the legislature grow.

Indeed, descriptive representation, rather than substantive representation, emerges from this analysis as the keystone to the representation of women. The percentage of women in the legislature is a principal determinant of women's policy responsiveness and of women's confidence in the legislative process. Descriptive representation also mediates virtually all of the impact of formal representation on both policy responsiveness and symbolic representation. This is not to suggest that descriptive representation is sufficient for ensuring political representation. Pitkin's arguments for the importance of all four dimensions and
for the normative primacy of substantive representation are compelling. The analysis does suggest, however, that descriptive representation is the glue that binds the several dimensions of representation together into something resembling a coherent whole.

EGOCENTRIC OR SOCIOTROPIC ASSESSMENTS OF REPRESENTATION. A final question concerns the extent to which perceptions of legislatures' legitimacy hinge on egocentric versus sociotropic evaluations of representation. One way of assessing this is by comparing survey responses of men and women. Specifically, if assessments of representation are made on the basis of narrow self-interest, then men and women's confidence in the legislature should be affected differentially by variations in both descriptive representation and policy responsiveness. Specifically, women should be more strongly and positively affected than men by higher levels of women's representation. Conversely, if assessments of representation are based more on enlightened self-interest, then both men and women should recognize that their interests are significantly intertwined, and they should be relatively equally affected by women's descriptive representation and policy responsiveness.

To test this, we replicated the analysis in Figure 2 substituting men's for women's confidence in the legislature. The results in Table 4 are unambiguous. The effects of women's descriptive representation and policy responsiveness on men's confidence in the legislature are virtually identical to their effects on women. Men do not express more confidence in legislatures with fewer women or in contexts where women's policy interests are relatively neglected. To the contrary, men and women respond quite similarly to variations in the quantity and quality of women's representation. Men clearly respond sociotropically, interpreting what is good for the representation of women to be good, more generally, for society as a whole. While the absence of data on men's representation prevents a test of women's sociotropic evaluations, there is no reason to think that women are any more or less enlightened than men. The fact that women's absolute level of trust in the legislature is almost identical to men's ${ }^{17}$ despite decades, if not centuries, of gender inequality is strong, albeit circumstantial evidence in this regard.

## Women's Representation as Universal Representation

Pitkin conceives of representation as a complex structure whose multiple dimensions are closely integrated. Our analysis of women in 31 democratic countries confirms Pitkin's insights regarding the strong interconnections among the dimensions of representation. It also supports many of the specific hypotheses

[^11]TABLE 4
Direct, Indirect, and Total Effects (Standardized Maximum Likelihood Estimates) of Formal, Descriptive, and Substantive Representation on Men's and Women's Symbolic Representation

|  | Women's Confidence in <br> Legislature |  |  |  | Men's Confidence in <br> Legislature |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Direct | Indirect | Total |  | Direct | Indirect | Total |
| Formal Representation | .45 | .07 | .50 |  | .34 | .16 | .50 |
| Descriptive Representation (linear) | .13 | .00 | .13 |  | .28 | .00 | .28 |
| Descriptive Representation (squared) | .28 | .00 | .28 |  | .32 | .00 | .32 |
| Policy Responsiveness | -.10 | .00 | -.10 |  | -.02 | .00 | -.02 |

Notes:
Total $=$ Direct + Indirect Effects.
See Appendix A for variable coding and sources.
about these interconnections gleaned both from Pitkin and from diverse empirical work.

Although our findings are limited to representative democracies, the integrated model provides strong evidence, consistent with theory, that formal representative structures and processes exert powerful influences on the extent of women's descriptive representation, policy responsiveness, and symbolic representation. The integrated model corroborates previous research demonstrating that higher levels of descriptive representation increase legislatures' responsiveness to women's policy concerns and enhance perceptions of legitimacy. It also provides some of the strongest evidence, to date, supporting the idea that the effects of descriptive representation on policy responsiveness and symbolic representation are nonlinear and accelerate as the percentage of women in the legislature increases. While even a few women in a legislature can generate important benefits for women, real gains in policy responsiveness and political legitimacy appear to depend upon the achievement of a critical mass.

Although the results of our analyses substantially validate both Pitkin's theory and previous empirical research, two principal anomalies emerge. The first is the unexpected finding that women's policy responsiveness has little or no influence on women's perceptions of the legitimacy of the legislature. This is troubling not only because it contradicts the centrality of policy responsiveness in Pitkin's theoretical framework but also because it appears antagonistic to rational actor theories of political behavior. While we advanced several alternative hypotheses to account for the unexpected empirical results, including limited information and problems of blame attribution, systematic assessments of these possibilities require data currently unavailable.

Nevertheless, while citizens' lack of direct concern with policy responsiveness contradicts theory, it may pose fewer problems than it seems. Both policy respon-
siveness and legislative legitimacy are otherwise securely tied into this causal web, especially through their connections to descriptive representation. This ensures that the two will be closely correlated even if they are not directly or causally connected. Pitkin's conception of representation may require elaboration and refinement in specific empirical contexts, but its fundamental structure is confirmed.

A second apparent anomaly in the results is the observation that men respond to the representation (or misrepresentation) of women almost identically as do women. Men's confidence in the legislature is just as sensitive to the proportionality of the electoral system and to the proportion of women holding seats in the legislature. Far from undermining the integrated nature of women's representation, this unexpected finding corroborates the feminist argument that the promotion of women's rights inevitably advances the rights of men as well. In effect, women (and minorities, too, we presume) can be seen as the "miners' canaries" of political representation. Political systems that nurture and protect the representation of less-advantaged groups can be trusted by members of more advantaged groups to protect their interests as well. The quality of women's representation, in this sense, is universal.

## Appendix A: Variable Definitions, Means, and Standard Deviations

|  |  | Mean | Std |
| :---: | :---: | :---: | :---: |
| Presidential vs. |  |  |  |
| Parliamentary | Coded " 1 " if presidential system and "0" if | . 26 | . 44 |
| System | parliamentary system. |  |  |
| Electoral System |  |  |  |
| District Magnitude | A country's mean number of legislative seats per electoral district. | 7.60 | 8.30 |
| PR System | Coded " 1 " if system employs some form of proportional representation and " 0 " otherwise. ${ }^{\text {a }}$ | . 71 | . 46 |
| Percent Women | Percentage of legislators (lower house) who are women. ${ }^{\text {b }}$ | 15.00 | 10.40 |
| Women's Policies |  |  |  |
| Maternity policy | Length of national maternity leave in weeks. ${ }^{\text {d }}$ | 21.60 | 16.70 |
| Political equality | Index of Gender Equity in Political Rights: 1 = substantial inequality; $2=$ some inequality; $3=$ substantial equality of rights. ${ }^{\text {e }}$ | 2.00 | . 35 |
| Social equality | Index of Gender Equity in Social Rights: $1=$ substantial inequality; $2=$ some inequality; $3=$ substantial equality of rights. ${ }^{\text {e }}$ | 1.90 | . 33 |
| Marital equality | Equity of the sexes in marriage and divorce proceedings: $1=$ substantial inequality; $2=$ some inequality; $3=$ substantial equality of rights. ${ }^{\text {e }}$ | 2.60 | . 50 |

## Appendix A: continued

|  |  | Mean | Std |
| :---: | :---: | :---: | :---: |
| Women's Confidence | ". . . could you tell me how much confidence you have in (Parliament): a great deal of confidence, quite a lot of confidence, not very much confidence, or none at all?" Percentage of women responding "a great deal" or "quite a lot."f | . 35 | . 13 |
| Feminist Attitudes Need Child | "do you think that a woman has to have children . . . to be fulfilled . . ." $1=$ yes; $0=$ no. ${ }^{\text {f }}$ | . 50 | . 23 |
| Pay Problem | "If a woman earns more money than a man, it's almost certain to cause problems" $1=$ Strongly Agree/Agree; $0=$ Disagree/ Strongly Disagree. ${ }^{\text {f }}$ | . 44 | . 09 |
| Men Education | "A university education is more important for a boy than for a girl." $1=$ Strongly Agree/ Agree; $0=$ Disagree/Strongly Disagree. ${ }^{\text {f }}$ | . 20 | . 09 |

Sources: a. Beck, Thorsen, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh. 2001. "New Tools in Comparative Political Economy: The Database of Political Institutions." World Bank Economic Review 15 (1):165-176.
b. IPU. 1995. Women in Parliaments, 1945-1995: A World Statistical Survey, Reports and Documents, No. 23. Geneva: IPU.
c. UN Development Program. 1997. The Human Development Report. New York: United Nations.
d. UN Statistics Division. 2000. Table 5.C-Maternity leave benefits. http://unstats.un.org/unsd/demographic/ww2000/table5c.htm.
e. Humana, Charles. 1992. World Human Rights Guide. 3rd ed. New York: Oxford University Press.
f. World Values Survey, 1995-1997.

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[^0]:    ${ }^{1}$ The idea that women share distinctive political interests is controversial. Women are a diverse group with diverse interests that vary along lines of race, ethnicity, class, etc. Certainly all women do not agree on exactly what women's interests are. Yet, in general terms, women are likely to have some interests that are distinguishable from those of men or those of other identity-based groups helping to make them suitable for this analysis.

[^1]:    ${ }^{2}$ In addition to public policy, Eulau and Karps (1977) identify three other ways in which representatives can respond to constituents: service responsiveness, which refers to the provision of particularized benefits to individuals or groups; allocation responsiveness, which refers to the generation of pork barrel benefits for the constituency; and symbolic responsiveness, which refers to intangible gestures made in response to constituent interests.

[^2]:    ${ }^{3}$ In the long run, the assumption that formal representation is exogenous to descriptive representation and policy responsiveness probably cannot be sustained. As the composition of the legislature changes over time, it is entirely possible for representatives to enact legislation changing the electoral rules of the game. Indeed, the model as diagrammed is a static version of a more general, dynamic model in which virtually all of the hypothesized linkages could be conceived as reciprocal over time. Unfortunately, data limitations prevent the test of a dynamic model and necessitate the specification of those recursive linkages that are most plausible in the short run. Thus, electoral rules effectively are fixed and influence both who is elected and the policies they produce. In the same way, the percentage of women in a legislature is more likely, in the short run, to affect the responsiveness of the legislature to women's issues, even though in the long run the relationship may feed back.

[^3]:    ${ }^{4}$ Lijphart (1994, 130-31) notes that the effect of district magnitude on the number of parties varies by type of electoral system. It encourages greater numbers of parties in PR systems but discourages them in plurality-majority districts. Because there are very few plurality-majority districts with a district magnitude greater than 1 (and none in our study), we can largely ignore this theoretical concern in practice and treat district magnitude as always having positive effects on the number of parties.

[^4]:    ${ }^{5}$ The countries include: Argentina, Australia, Austria, Belgium, Britain, Bulgaria, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Nether-

[^5]:    ${ }^{9}$ Because the legislature is not the only representative institution in some systems and is not the only policymaking institution in others, we experimented with other measures of symbolic representation including measures of public confidence in "the government" and average public confidence across a range of various institutions. In fact, public confidence in different institutions is highly correlated and the model results are the same regardless of the variable used to measure symbolic representation.
    ${ }^{10}$ The number of possible influences on women's representation is virtually limitless. We would have liked, for example, to have measures of the strength of women's movements in each country, women's education levels, and women's membership in higher level areas of the workforce. Unfortunately, such data are in very short supply and could not be found in consistent cross-national form.

[^6]:    ${ }^{11}$ While we label this dimension feminist values, we might also have labeled it modernism-traditionalism or something similar. Additional analyses, not shown, demonstrate that this variable is highly correlated with the percentage of women in the workforce, GDP per capita, and (negatively) infant mortality. Indeed, all three of these additional variables have loadings greater than .40 on this latent variable when included together in the analysis. We include only feminist values here because they have the strongest loadings. They also have the strongest causal connections to other variables in the model and thus provide the strongest controls on the representational linkages.

[^7]:    ${ }^{12}$ The relative chi square statistic ( $\mathrm{cmin} / \mathrm{df}$ ) is considerably less than 2.0 , which, according to Carmines and McIver, demonstrates an "acceptable fit between the hypothetical model and the sample data" $(1981,80)$. The RMSEA is .13 , which is higher than the .05 level normally recommended but reasonably close given a small sample (Bollen 1989). The Incremental Fit Index (IFI) and Comparative Fit Index (CFI) are .79 and .70 , respectively, indicating that the model represents a $70-79 \%$ improvement over the null model.

[^8]:    ${ }^{13}$ Another problem with the model is multicollinearity $(\mathrm{r}=.91)$ in the parameter estimates for linkages A and B (i.e., those connecting proportional electoral systems with the percent women in the legislature and women's policy responsiveness). The effect of this multicollinearity is to inflate considerably the two parameters, making both appear larger than either one does when entered separately. Given that the linkage between electoral proportionality and women's policy responsiveness is not significant at traditional levels ( $p<.10$ for a small sample) and remains nonsignificant when the linkage between percent women and policy responsiveness is removed, we have deleted the electoral $\rightarrow$ policy link from the revised model.

[^9]:    ${ }^{14}$ The magnitude of the indirect effect is calculated by multiplying the standardized coefficients in the compound path. Thus, the indirect effect of the electoral system on policy responsiveness via descriptive representation is $.57 \times .42=.24$.

[^10]:    ${ }^{15}$ The parameter between substantive and symbolic representation also is highly correlated with the parameter between descriptive and symbolic representation such that the two cannot be included in the model simultaneously.
    ${ }^{16}$ There is no basis in theory or in previous research to predict what the specific percentage of women must be before a critical threshold is reached. Thus we arbitrarily divided the 31 legislatures at the mean. Several other, higher thresholds (the upper quartile and 85 th percentile) were also tested with equally negligible results.

[^11]:    ${ }^{17}$ Men on average are $2.5 \%$ more likely to trust their legislature than are women. The largest gap across these countries is in Australia where men are $11 \%$ more trusting of the legislature. Sweden is second with a $9 \%$ male edge. Women are more trusting of the legislature then men in nine countries; the largest gap is in Switzerland where women are $6 \%$ more likely to trust the legislature.

