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Political Context and the Turnout of New Women Voters after Suffrage

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Many observers expected new women voters to respond to their political context in distinctive ways. Some scholars anticipated that newly-enfranchised women—lacking political interest and experience—would be volatile and highly responsive to context. Others expected political isolation and norms proscribing political activity would insulate women from political stimuli. We test these competing predictions with a Bayesian approach to ecological inference and a unique set of aggregate data. We find that the responsiveness of women's turnout is strikingly similar to that of men. However, the lesser impact of electoral competition, and the greater effect of electoral laws and prior suffrage activism, suggest that the experience of and response to disenfranchisement shaped women's turnout after the vote was won.

The ratification of the 19th Amendment in 1920 ushered in the largest expansion of the electorate in American history, nearly doubling the number of citizens eligible to vote.[1] Both then and now, expectations for how women would use their new right were shaped by beliefs about the consequences of and rationale for women's long exclusion from electoral activity, the central arena for politics in the late nineteenth and early twentieth centuries. In theory—and many would claim, practice—women of this period inhabited the private world of the home rather than the public world of politics and lacked the experience, interest, and information necessary for effective, and ordered, democratic participation. Many of their contemporaries, as well as later scholars, assumed that women were generally disinclined to vote, and thus unlikely to turn out except when stimulated by a compelling campaign or political situation. Obstacles that increased the costs of voting were expected to weigh heavily on those already unlikely to participate. Others, however, suggest that women's lack of interest in and exposure to political information might insulate them from contextual effects. Finally, recent work has challenged the assumption that newly enfranchised women were devoid of political knowledge, experience, and interest. If so, female voters may have responded to context more similarly to men than previously assumed.

Despite these competing views, few of these expectations have been subjected to empirical analysis. Indeed, we have very little reliable information about most aspects of women's voting behavior immediately after suffrage, despite a more than 70-year battle over women's fitness as voters, as well as continued interest in gendered voting to this day. In short, we have lacked the appropriate tools and evidence with which to examine this unprecedented expansion of the electorate: With a few important exceptions, men's and women's ballots are not counted separately in the United States. Mass surveys are either unavailable or unreliable during this era. The ecological fallacy (Robinson 1950) has precluded or discredited the use of available aggregate-level data.

In this article, we overcome these obstacles by employing advances in ecological inference and previously unavailable or untapped electoral and census information. We use a Bayesian approach to ecological inference (based on Wakefield 2004 and extending

[1]We say *nearly* because 11 states allowed women to vote in the 1916 presidential election. Moreover, restrictive interpretations of registration rules (ratification in August 1920 occurred after registration deadlines for the November 1920 election in a number of states) systematically denied women access to the ballot in Arkansas, Georgia, Mississippi, and South Carolina in 1920 (Gosnell 1930).

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the work of King 1997) that exploits nonsample information to produce estimates of turnout for both men and women in five states during the elections of 1920 and 1924. A major contribution of this research is estimation and analysis of female turnout in a number of places where we previously had virtually no information about how women turned out to vote after suffrage.

The estimation procedure permits us to both produce point estimates of turnout and to estimate the effects of contextual variables on male and female turnout. Specifically, we consider the impact of electoral competitiveness, election laws, urban-rural differences, previous prosuffrage activity, and time since enfranchisement on the turnout of both women and men. In addition to being the first to examine the impact of many of these factors on turnout among early women voters, our approach allows us to determine whether women's turnout was more, less, or similarly susceptible to the influence of contextual factors as compared to the turnout of long-enfranchised men.

We first describe our assumptions about and expectations for the level and variation in women's turnout in the 1920s. Next, we turn to the data and methods used to estimate turnout and measure the influence of contextual factors. We find indications of the lingering effects of disenfranchisement on female turnout: In 1920, women turn out at much lower rates than men, restrictive electoral rules weigh more heavily on women, and electoral competition fails to stimulate women to vote to the extent it does men. Overall, however, we find the same factors generally influence male and female turnout in the same way and to the same degree.

Assumptions and Expectations

Level of Female Turnout

Voting has long been characterized as a learned behavior and an acquired habit; turnout in the past increases the probability of turnout in the future (see Gerber, Green, and Shachar 2003; Plutzer 2002). Those who have been systematically denied the opportunity to participate in the past may be disadvantaged in the future. Contemporary activists expressed the concern that women's turnout was hampered by lack of experience (Gerould 1925; Wells 1929). At the same time, the experience of other newly enfranchised groups suggests that acquiring the habit of voting may not be that difficult; other new voters appear to have turned out at nearly equal rates and in much the same manner as those already in the electorate (Kleppner 1982; Niemi, Stanley, and Evans 1984).

New women voters, however, confronted unique conditions. As Andersen writes, "viewing women as simply one instance of the class of 'newly enfranchised voters' is inadequate" (1990, 196) because women were not only denied the vote, but had been taught to understand themselves as "*by nature unsuited* to politics" (italics in original). Dominant (but evolving) social customs equated femininity with the private sphere of home, as opposed to the public world of politics (Kraditor 1981; Lane 1959). Even after enfranchisement, social norms continued to discourage women from voting (Andersen 1996; Baker 1984). In Merriam and Gosnell's (1924) classic study of nonvoting in 1920s Chicago, almost 10% of nonvoters and more than 15% of unregistered respondents give "disbelief in women's voting" or "objections of husband" as their reason (see also Gosnell 1927).

Since female turnout was not observed directly in most states, we have very few direct indicators of turnout by sex. Nonetheless, every known instance of available data in the United States has revealed a lower rate of turnout or registration among women as compared to men after suffrage (cf., Arneson 1925; Gamm 1986; Goldstein 1984; Pollock 1939). In other nations, where data on the sex of voters are available, women consistently turn out at lower rates than men after enfranchisement (Duverger 1955; Tingsten 1937). Postwar survey work indicates that women's participation, while increasing over time, continued to lag behind that of men from the advent of survey research through the 1970s (cf. Berelson, Lazarsfeld, and McPhee 1954; Campbell et al. 1960; Wolfinger and Rosenstone 1980).

Variation in Female Turnout

While female turnout consistently lags behind that of men, the few available studies reveal considerable variation in the level of female turnout and the size of the sex differential both within the U.S. and within and between other nation states (Burnham 1980; Duverger 1955; Goldstein 1984; Niemi and Weisberg 1984; Tingsten 1937). Previous scholarship suggests that variation in women's turnout can be explained in part by the greater responsiveness of female voters to changes in the political context. Newly enfranchised women were viewed as typical low-motivation (or "peripheral") voters, citizens who lacked strong socialization for voting (Campbell 1960). In addition to gender-specific norms that discouraged political behavior, women were understood to share certain

nongender-specific characteristics—lack of interest in and knowledge of politics—with other low-motivation voters. Glaser (1962) argues that the default behavior for such groups, including women, is nonvoting. When stimuli are present that help overcome these disadvantages, women's voting should be particularly affected. As a result, "when the glamour of campaigns and public concern vary, *women*, the young, and the lower class will fluctuate more in turnout than will *men*, the middle-aged, and the upper class" (Glaser 1962, 38; italics added).

The expectation that low-motivation and low-interest voters will respond more strongly to external stimuli can be found throughout the traditional elections literature (cf., Campbell 1960; Converse 1966) and is supported by previous research. For example, canvassing efforts appear to produce the greatest effects on those who are the least likely to turn out to vote (Berelson, Lazarsfeld, and McPhee 1954; Gosnell 1927; Lupfer and Price 1972; Price and Lupfer 1973; Rosenstone and Hansen 1993). Those inclined to participate may already be at their limit for mobilization, while those with less of a natural inclination are available for mobilization effects (Huckfeldt and Sprague 1992). In other countries, where turnout was generally low, male-female turnout differences after suffrage were relatively large. As overall turnout rates increased, the gap between male and female turnout narrowed, sometimes considerably (Tingsten 1937). Thus whatever stimulated male turnout appears to have had an even greater effect on female turnout.

Alternatively, women may have been less responsive to context than were men. Women may have had fewer opportunities to be exposed to contextual cues because their social networks may have been more homogenous and limited. Men were more likely to work outside of the home or immediate neighborhood, thus exposing themselves to contextual stimuli in a way that women were not. In his classic study of Jews in 1950s Boston, Fuchs (1955) notes that Jewish women's interactions were far more circumscribed than were their husband's (most women rarely left their own ward), resulting in distinct political patterns: Men, exposed to the non-Jewish community, were more likely to defect from traditional Jewish patterns in vote choice than were women. Many 1920s women may have been characterized by as much or more isolation from the larger community. Moreover, while women were not well socialized into a political role, they did not lack socialization; rather, they were strongly socialized into a *nonpolitical* role (Stucker 1976). As a result, women's reluctance to challenge dominant norms may not have been overcome by any contextual stimuli; some women may simply have been unwilling to vote and no external conditions could convince them otherwise. Women's presumed disinterest may have led them to pay less attention to or gather less political information, insulating them from contextual effects.

Finally, perhaps newly enfranchised women responded to their political context in much the same manner as men did. Despite being characterized as apolitical, women did not arrive at polling places in 1920 completely devoid of political information or experience (see Cott 1990). Many women were immersed in their communities through various nonelectoral forms of civic and political participation prior to their enfranchisement (Clemens 1997). Women's activism had both facilitated and benefited from an expanded definition of the political that encompassed issues about which women were expected to have special expertise, such as social reform, perhaps increasing female interest in politics (Baker 1984). While political intensity and participation were declining by 1920, most voting-age women nonetheless had been socialized in a period characterized by strong partisanship, highly salient and intense political debates, and widespread political participation (Burnham 1965). This socialization likely facilitated the assimilation of women into their new political role.

What contextual effects might we expect to influence turnout, particularly that of women voters? In the sections below, we delineate the contextual effects examined in this research.

Electoral Competition

Many of those who expect low-motivation voters to be strongly influenced by contextual stimuli have been interested in the intensity, general interest, or what Glaser (1962) refers to as the "glamour," of the campaign. One central factor in the intensity of any election contest is the closeness of competition, which has long been identified as a spur to turnout (cf. Campbell et al. 1960; Holbrook and Van Dunk 1993; Patterson and Caldeira 1983). Close competition induces parties and candidates to expend greater effort on voter mobilization, encourages heightened press coverage, generates greater interest in the election, and increases the perceived value of any one vote (see Aldrich 1993; Rosenstone and Hanson 1993).

A number of scholars believed that a highly competitive race would contribute to higher turnout among women during this period (Brown 1991; Burnham 1965; Jensen 1981; Kleppner 1982). Where competition is heightened, the attendant greater interest and attention, stakes, and mobilizing efforts may alleviate the presumed higher costs of voting borne by women due to social norms and lack of experience. On the other hand, women's isolation from politics may temper the impact of electoral competition on female rates of turnout.

Urban versus Rural

Comparatively, scholars have expected, and found, that newly enfranchised citizens living in cities and towns turn out at higher rates than those in rural areas. Rokkan (1970) argues that new entrants at the "center" of the social system (more urban and industrialized) adapt to voting more quickly than those at the "periphery" (rural citizens). Consistent with Rokkan's hypothesis, Tingsten's (1937) study of comparative turnout after suffrage found that both men and women living in rural areas were less likely to turn out than those living in cities and towns, but the size of the male-female difference was almost always greater in rural areas than it is in cities and towns. Some contemporary American observers believed that rural life—isolation and the unremitting obligations of farming—would depress the turnout of women (Butler 1924).

On the other hand, there are reasons to expect American women in rural places to turn out at rates surpassing those of women in urban contexts. Tingsten (1937) attributes the rural-urban difference to class distinctions, assuming rural voters are largely poor with little education, while the urban electorate is both more affluent and better educated. As we might expect a different distribution in 1920s America, with the clustering of less affluent, immigrant, and poorly educated citizens in urban centers, such rural-urban patterns may not hold in the United States. If anything, urbanism may have had a greater *negative* impact on female turnout. Many cities featured social contexts characterized by large immigrant populations where language barriers and ethnic customs that emphasized nonpolitical gender roles may have particularly discouraged women from voting (Andersen 1990; Butler 1924; Gerould 1925; Merriam and Gosnell 1924; Smith 1980; Sumner 1909). Previous analyses support an expectation of lower turnout, especially among women, in urban locales (Andersen 1994; Butler 1924).

Election Laws

The legal requirements for voting have long been identified as deterrents to participation (Patterson and Caldeira 1983; Powell 1986; Wolfinger and Rosenstone 1980). Many of the major Progressive-era reforms, particularly the Australian ballot, were in widespread use by this time. Yet, states and localities varied considerably in the types and stringency of the provisions they employed. Here, again, it seems possible that women's turnout was especially responsive to variation in the legal costs associated with voting. Restrictive electoral laws may have particularly discouraged already disinclined female voters from exercising their rights.

Previous Pro-Suffrage Activity

We might expect previous pro-suffrage activity to have created a context favorable to women's turnout (Andersen 1990, 1996; Butler 1924). By articulating various reasons—many of which emphasized traditional female qualities (Kraditor 1981)—why women ought to vote, suffragists may have encouraged women to use their newly won right in ways that avoided challenging conventional gender roles. In addition, suffrage activity provided women with political experience and skills and exposed both sexes to models of female political activity. Finally, previous suffrage activity may indicate an organizational presence capable of mobilizing and socializing new women voters.[2]

Experience (Years since Suffrage Extension)

The experience of voting reinforces political preferences, particularly partisanship and commitment to the political system (Converse 1969, 1976; McPhee and Ferguson 1962), which in turn lead to greater stability and consistency in electoral behavior at the individual and aggregate level. Thus, we might expect that

[2]The capacity of suffrage organizations to take on the new tasks of voter education and mobilization appears to have been limited in the long run, particularly in comparison with the capabilities of established political parties (see Harvey 1998). Nonetheless, newspaper accounts indicate that a number of local suffrage organizations attempted at least rudimentary programs to assist women with their new civic task, particularly in 1920.

as time passes, female suffrage would seem less foreign or offensive, women would gain skills, knowledge, and commitment, and as a result, the propensity of women to turn out would increase. Contemporary writers often claimed that the passage of time and acquisition of habit would lead to increasing female turnout (e.g., Wells 1929). The evidence that women became more likely to vote over time is mixed: While rates of female registration increased in Boston from 1920 to 1928 (Gamm 1986), women's turnout declined between the 1916 and 1920 presidential elections in Chicago (Goldstein 1984).

Data and Measurement

Data constraints have limited the few previous empirical studies of women's use of the ballot after suffrage to one state, Illinois (see Goldstein 1984), and a few scattered cities or counties (e.g., Gamm 1986; Pollock 1939; Sumner 1909). Virtually no other actual data or reliable estimates of women's rates of turnout after suffrage exist. In an effort to expand our knowledge of women's turnout after suffrage beyond the limits of previous data, we gather election and census data at the smallest available aggregation, Minor Civil Divisions (MCDs), the primary political subdivisions of counties.[3] Election returns are only sporadically available and usable at the level of the MCD.[4] We report results for five non-Southern states, located in the Midwestern and Eastern regions of the United States: Connecticut, Illinois, Massachusetts, Michigan, and New York. These states account for one-fifth (21.5%) of the Electoral College vote in 1920. We make no claim that these five states are representative of the United States in the 1920s. However, by providing estimates of turnout in these five different states we are able to describe and analyze women's electoral behavior in a larger and more diverse set of places than possible in previous research. Unlike past studies which used a mix of data sources, our estimation strategy uses similar electoral and census information to create comparable measures of turnout behavior in five full states where, with the exception of Illinois, we previously had very little, or no, information about women's turnout after enfranchisement. Most importantly, these five states (and their combined thousands of MCDs) provide us with variation in contextual setting beyond what was possible with previous studies of single states, cities, or counties.[5]

Election and Census Data

Official election returns are published at the MCD level for four of the five states in our sample.[6] In Illinois, the only U.S. state in which women's votes were counted separately during this period,[7] a county-by-county search located original MCD-level records for eight of 102 counties, including Cook county and the Chicago wards, and covering 51% of the 1920 population.[8] These election returns are merged with available demographic data published by the U.S. Census. Before 1930, the census only reported MCD population totals. Beginning in 1930, other demographic characteristics, including sex and age, are reported at the MCD level. We use a combination of census data from the county and MCD level in 1920 and 1930 to estimate the number of voting age males and females in each MCD in 1920 and 1924. Where redistricting led to changes in MCD boundaries, we aggregate several MCDs together into MCD groupings, or in extreme cases where a county was redistricted in such a way that matching census and election returns is impossible at the MCD level, the county itself is the observation. Where ward-level data provides further disaggregation of MCDs that are large cities, those data are used. The result is nearly 3,000 observations

[3]Minor Civil Division (MCD) is the term the U.S. Census applies to the primary governmental or administrative divisions of counties in most states. MCDs include entities such as towns, townships, villages, and districts, depending on the state, and cover the entire United States land mass.

[4]A number of Western states reported election returns at the MCD level. But because these states were more recently established, both MCD and county lines were subject to repeated and frequent revision and creation, making a merge with decennial census data and analysis at the MCD level practically impossible. As far as we have been able to determine, electoral data at the level of the MCD were not maintained or archived for any Southern state during this period.

[5]Further information on our sample states can be found in Web Appendix A, available from the journal web site.

[6]Specifically: *Connecticut Statement of Vote*, *Massachusetts Public Document No. 43*, *Michigan Manual*, and *Legislative Manual of the State of New York*. In Connecticut, these data were supplemented by newspaper reports of the ward-level returns; in the others, ward-level returns are reported in the official state publication.

[7]Illinois extended the vote to women for a limited set of offices in 1913. Women were issued different ballots than men and the results were reported separately through the 1920 presidential election (Goldstein 1984).

[8]Source: *Blue Book of the State of Illinois*, *Chicago Daily News Almanac and Year-Book*, and original Statements of Vote held by county offices.

of variously sized geographic units for 1920 and 1924. Over 80% of the observations are MCDs.[9]

Measurement

Our data collection strategy permits identification of wholly urban areas, a measure that is foreclosed when using county-level data. We identify as *urban* any area that is a ward in a city of 50,000 or more and any area that is a city or other MCD of 50,000 or more. This measure delineates about 10% of the observations as urban areas, but over one-half of the eligible electorate resided in these urban areas in 1920.

We construct an indicator of *electoral competition* that indicates the closeness of the election. Our measure is a function of the absolute difference between the county-level Democratic and Republican shares of the two-party vote for president or governor. The measure ranges from 0 to 1, with 1 indicating close competition (each party receives the same share of the votes, or .5) and 0 indicating one-party dominance (one party receives all of the votes). We retain the greater of either the gubernatorial or Presidential measure in each election year. We measure electoral competition at the county level, which allows for the fact that while one party may dominate a state, closer party competition may characterize other substate races, perhaps driving up turnout in those specific regions (Rosenstone and Hansen 1993).

Using information provided by the League of Women Voters (Blakey 1928), we create a state-level index of *electoral laws* indicating presence of (1) literacy tests; (2) poll taxes; and (3) residency requirements greater than six months (all of the states in our sample had some form of personal registration system). Because these measures are highly correlated, we sum the three into a general index of the number of legal hurdles faced by citizens.

We employ a state-level measure of *previous prosuffrage activity* that indicates mass exposure to suffrage appeals (see McCammon and Campbell 2001; McCammon et al. 2001). Much prosuffrage activity involved "insider" strategies (lobbying, offering testimony, and so on) not directed at the general public. The suffrage movement also engaged in "outsider" strategies (e.g., public meetings, speeches, parades, and leafleting) directed at producing support for women's suffrage among the general population. To measure public exposure to suffrage appeals, we use the total number of *outsider* strategies employed in the state since the Civil War. We include this indicator in our models of male turnout as well as female, reasoning that public debate over women's suffrage might have increased interest in electoral participation overall.

Finally, we include a measure of the *years since suffrage extension*. Among our sample states, Illinois (1913), Michigan (1918), and New York (1918) enfranchised women before 1920. While only in Illinois had women been permitted to vote in a previous presidential election, women in these other states had some opportunity to exercise their suffrage right or adjust to the idea of women's suffrage before 1920. We expect women's turnout to be positively related to the number of years that women have been permitted to vote in the state. Observation of or concerns about the effects of women's participation could also motivate previously uninterested male voters to participate. This variable is therefore also included in our model for male turnout.[10]

Methodology

Ecological inference relying on the marginal distribution of gender is a particularly challenging task. Even at the MCD level, we do not observe extremely high concentrations of women or men. This distinguishes our application from those that focus on race: racial segregation results in high concentrations of various racial groups in particular geographic areas, permitting the direct observation of behavior by race. The logically possible combinations of male and female turnout, given observed turnout and the proportion of women in the MCD, range across a very wide interval. A second complication is that the Illinois data (where male and female turnout are known) reveal severe aggregation bias in 1920. There are no observed MCDs, wards, or counties where female turnout exceeded male turnout in Illinois. The ecological relationship—the pattern in the aggregate data—suggests the opposite relationship: as the proportion of women increases, aggregate turnout increases. The (mistaken) ecological inference is that women turned out more than men. To overcome these problems of wide logical bounds and aggregation bias, we introduce nonsample information to the estimation problem.

The core problem of ecological inference is identifying and using information outside of the sample

[9]Further information regarding the geographic units used in this analysis are available in Web Appendix A published on the journal web site.

[10]Additional information regarding our independent variables is available in Web Appendix A published on the journal web site.

data to inform estimates of parameters of interest by narrowing the logical bounds (Achen and Shively 1995; King 1997). King, Rosen, and Tanner (1999) adopt a Bayesian modeling approach that relies on a hierarchical structure to introduce information from the aggregate to the estimates of quantities at lower levels of aggregation. We rely on a Bayesian hierarchical modeling strategy developed in Wakefield (2004), but extend Wakefield's approach in two ways. First, estimation is aided by the uncontroversial assumption (justified above) that male turnout will exceed female turnout in each geographic unit in 1920 and 1924. Second, we introduce information about expected variation across states, counties, and MCDs based on the contextual information described above. This Bayesian strategy both incorporates information about and permits a test of the relationship between contextual factors.[11] The probability of male and female turnout and the relationship between contextual factors and turnout (coefficients from a linear regression model) are simultaneously estimated for the entire set of available data at each election year. This estimation strategy avoids the pitfalls of using point estimates from single-stage ecological inference techniques as dependent variables in second-stage OLS regressions (see Herron and Schotts 2004). Further details are provided in the appendix, below.

The availability of a limited number of observations from Illinois where true values are known permits the atypical opportunity to verify the accuracy of our approach to ecological inference. The top half of Figure 1 plots our estimates of 1920 female turnout in Illinois against the true values. Our estimates generally fall quite close to the 45-degree line (perfect recovery of the true values) with few outliers. The population-weighted correlation between observed and estimated female turnout is .92. A number of observations in the center of the distribution are above the main diagonal, indicating that aggregate female turnout is overpredicted by nearly 3 percentage points (true mean of .41 compared to an estimated mean of .44). One implication of this error is that the true disparity between male and female turnout is slightly larger than the estimates would indicate. The posterior density for a representative parameter, female turnout (p_0) in Genoa Township, Illinois, is reproduced at the bottom of Figure 1. The density indicates that the posterior median is very close to the observed value, but that the estimate remains uncertain. Overall, the Illinois data verify that our estimation strategy accurately recovers the parameters of interest for the Illinois observations (nearly 10% of our 1920 sample). Given the difficulties inherent in ecological inference in the case of gender, this is no mean feat.

Results

Figure 2 scatters estimated female turnout against estimated male turnout for the ~3,000 observations in 1920 and 1924. These plots indicate that, in general, where male turnout increased, so did female turnout. Female turnout varies with male turnout ($r = .93$), consistent with 1916 and 1920 Illinois ($r = .85$), suggesting that men and women tend to respond to the same general contextual factors. Moreover, female turnout did not rise faster than male turnout in response to whatever stimuli increased turnout overall; indeed, the linear smoother in both figures (but especially in 1924) indicates a small decrease in female turnout relative to male as male turnout increases, in contrast to what is observed in other countries (Duverger 1955; Tingsten 1937). This initial finding casts doubt on the hypothesis that female turnout was stimulated by context to a greater degree than was male turnout.

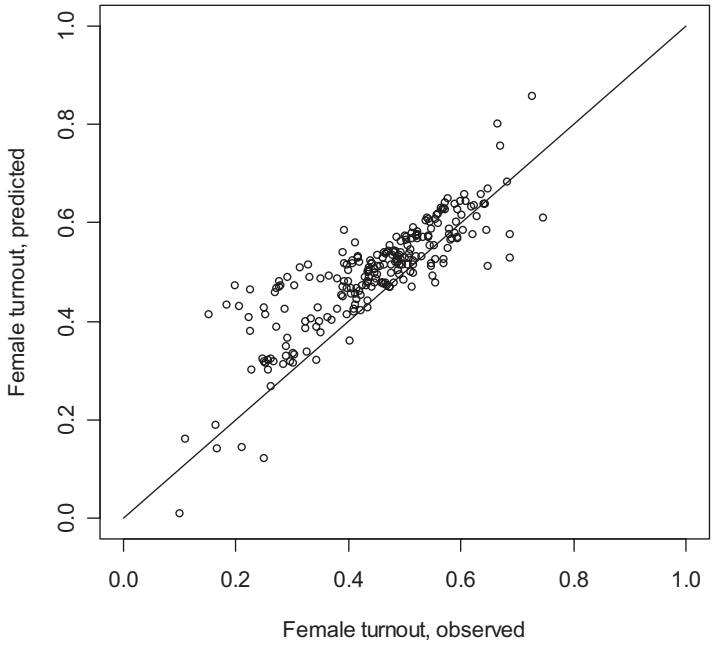
In each sample state the difference between male and turnout is in the neighborhood of 20 percentage points, consistent with the observed difference in 1920 (and 1916) Illinois (23 points), although the size of the differential varies between states by as much as 7 points in 1920 and 6 points in 1924.[12] All states, except Michigan, experience a modest increase in female turnout and slightly larger increase in male turnout from 1920 to 1924. The net effect is that the gap between male and female turnout widens from 18 percentage points in 1920 to 20 points in 1924. This is surprising, given that we expected experience to drive up women's turnout in particular, but consistent with what was observed in Illinois between 1916 and 1920 (Goldstein 1984).

The point estimates and regions of highest posterior density are reported for the regression coefficients in Tables 1 and 2. Each table reports estimates from three models for each election, by gender. The regions of highest posterior density (labeled as Bayesian

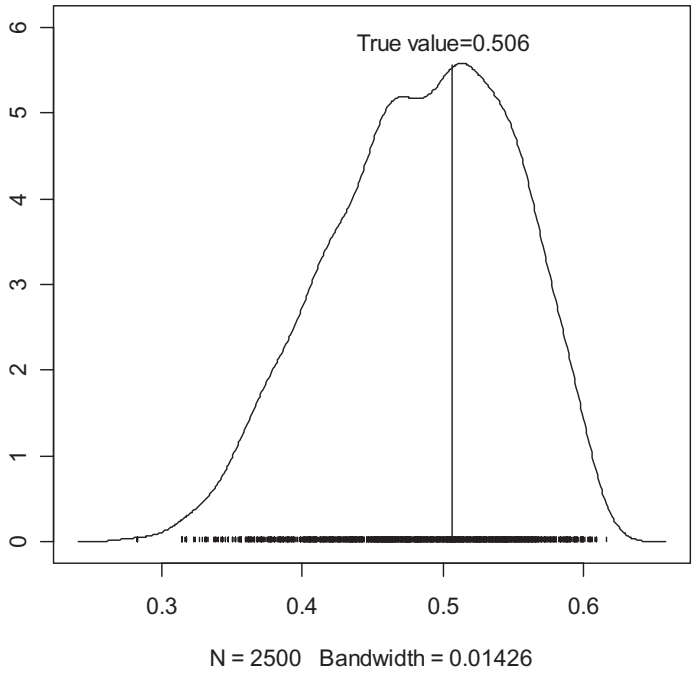
[11]Our model is a Bayesian implementation of the "extended model" proposed in King (1997, 179–94).

[12]State-level estimates of male and female turnout are reported in Web Appendix A available on the journal web site.

Figure 1 Using True Values to Evaluate Ecological Inference Estimates

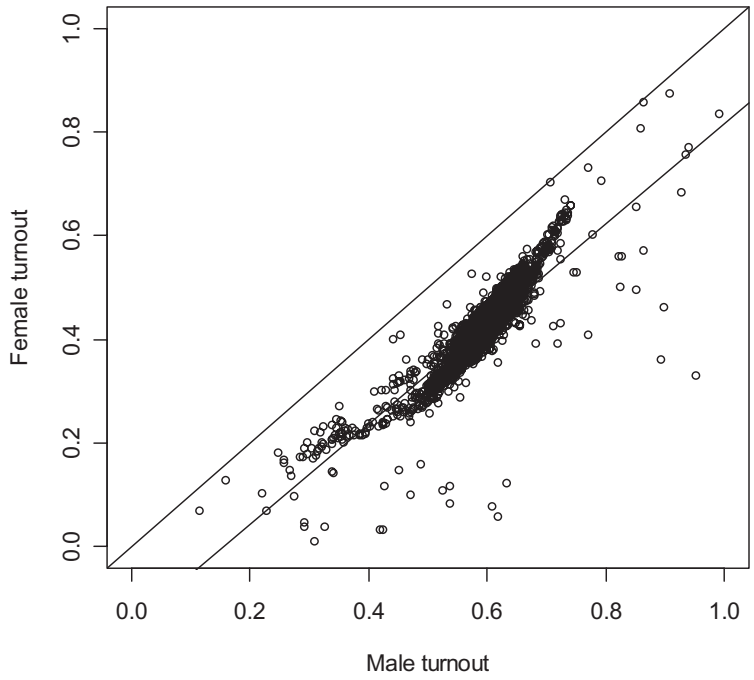


Predicted and observed female turnout, Illinois, 1920

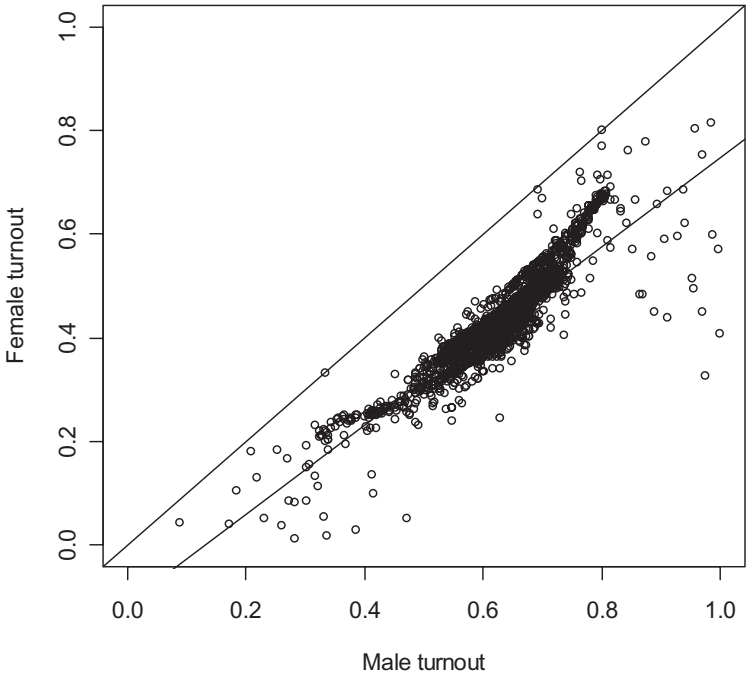


Posterior density: Female turnout, Genoa Township (Dekalb County, Illinois), 1920

Figure 2 Estimated Female Turnout as a Function of Estimated Male Turnout



1920



1924

Table 1 Explaining Variation in Female and Male Turnout, 1920

Explanatory Variables	Full Model	Model I	Model II	Effect on Probability of Turnout
Female turnout (logit scale)				
Urban (dummy)	−.52	−.54	−.52	−13% pts
	[−.60 −.46]	[−.60 −.48]	[−.61 −.45]	
Electoral competition	.55	.43	n/a	+4% pts
	[.35 .77]	[.24 .60]		
Electoral laws (index)	−.16	−.15	n/a	−11% pts
	[−.25 −.07]	[−.18 −.12]		
Previous pro-suffrage activity	.006	n/a	.000	0
	[.000 .013]		[−.003 .002]	
Years since suffrage extension	.06	n/a	.06	+9% pts
	[.04 .08]		[.04 .08]	
Constant	−1.02	−.33	−.40	
	[−1.49 −.60]	[−.48 −.22]	[−.63 −.18]	
N	2,959	2,959	2,959	
Male turnout (logit scale)				
Urban (dummy)	−.47	−.51	−.49	−12% pts
	[−.52 −.40]	[−.56 −.45]	[−.57 −.41]	
Electoral competition	.24	.80	n/a	+9% pts
	[.04 .42]	[.64 .97]		
Electoral laws (index)	−.03	−.08	n/a	−6% pts
	[−.09 .05]	[−.11 −.06]		
Previous pro-suffrage activity	.001	n/a	.000	0
	[−.004 .005]		[−.002 .002]	
Years since suffrage extension	.04	n/a	.05	+9% pts
	[.02 .06]		[.04 .07]	
Constant	.11	.05	.32	
	[−.22 .49]	[−.05 .18]	[.15 .50]	
N	2,959	2.959	2,959	

Notes: Dependent variable: logit of the proportion of age-eligible female population casting votes for President or Governor. Estimated via Markov Chain Monte Carlo. 95 percent Bayesian Credible Interval (BCI) in brackets. Effect on probability of turnout is based on restricted model coefficients. Observations are weighted by total voting age population in the estimation of regression coefficients.

Credible Intervals, or BCIs) indicate the smallest region of the posterior distribution that contains 95% of the mass of the distribution. If zero appears in that interval, then the effect of the contextual effect is trivial. If zero is not in the BCI, then the associated variable provides information about MCD-level variation in turnout. Three different model specifications are reported due to problems of collinearity. Although the actual point estimates for male and female turnout are not dependent upon the model specification, the coefficients vary across the models due to collinearity, particularly between *electoral laws* and *previous pro-suffrage activity* ($r = .88$). The restricted models permit estimation of the effects of *electoral laws* and *electoral competition* separate from the effects of *previous pro-suffrage activity* and *experience (years since suffrage extension)*. Coefficients from the restricted models are in the expected direction and have much narrower BCIs than in the full model. The final column of both tables reports the estimated effect on the probability of turnout.[13]

There is some evidence that women's turnout was more responsive to contextual cues in the first election following enfranchisement. As many expected, the impact of *electoral laws* bore more heavily on inexpe-

[13]The estimated effect of each variable on female and male turnout reports the increase or decrease in the turnout holding all but one independent variable constant at the mean and calculating, using the coefficients in the restricted models, the difference between turnout rates with the remaining variable at its maximum and minimum values. The exception is electoral competition; the reported effect is the difference in turnout between the 20th and 80th percentile of electoral competition.

Table 2 Explaining Variation in Female and Male Turnout, 1924

Explanatory Variables	Full Model	Model I	Model II	Effect on Probability of Turnout
Female turnout (logit scale)				
Urban (dummy)	−.61	−.66	−.62	−15% pts
	[−.70 −.52]	[−.75 −.59]	[−.70 −.52]	
Electoral competition	.12	.74	n/a	+6% pts
	[−.12 .41]	[.50 1.00]		
Electoral laws (index)	−.01	−.11	n/a	−3% pts
	[−.11 .08]	[−.14 −.07]		
Previous pro-suffrage activity	.008	n/a	.007	+8% pts
	[.002 .015]		[.004 .010]	
Years since suffrage extension	.10	n/a	.10	+16% pts
	[.08 .13]		[.08 .12]	
Constant	−1.61	−.55	−1.42	
	[−2.13 −1.17]	[−.76 −.35]	[−1.77 −1.11]	
N	3,047	3,047	3,047	
Male turnout (logit scale)				
Urban (dummy)	−.50	−.52	−.50	−13% pts
	[−.58 −.42]	[−.59 −.44]	[−.58 −.41]	
Electoral competition	−.14	.47	n/a	+9% pts
	[−.35 .15]	[.28 .66]		
Electoral laws (index)	.06	−.07	n/a	−2% pts
	[−.02 .14]	[−.11 −.04]		
Previous pro-suffrage activity	.004	n/a	.008	+3% pts
	[−.001 .009]		[.005 .010]	
Years since suffrage extension	.09	n/a	.10	+16% pts
	[.07 .11]		[.08 .11]	
Constant	−.27	.41	−.62	
	[−.65 .13]	[.20 .55]	[−.90 −.35]	
N	3,047	3,047	3,047	

Notes: Dependent variable: logit of the proportion of age-eligible population casting votes for President or Governor. Estimated via Markov Chain Monte Carlo. 95 percent Bayesian Credible Interval (BCI) in brackets. Effect on probability of turnout is based on restricted model coefficients. Observations are weighted by total voting age population in the estimation of regression coefficients.

rienced female voters; the effect of moving from none to the total possible three restrictive laws causes a decline in female turnout of 11 percentage points, compared to just 6 percentage points among men. The BCIs for the electoral laws coefficients for men and women do not overlap, suggesting that the sizes of the effects are considerably different. Given that average female turnout is less than 40%, an 11-point decline is sizable.

The effect of *electoral competition* is also different for male and female voters in 1920. Substantively, turnout for men is expected to be 9 percentage points higher in highly competitive counties (.93) than in marginally competitive counties (.48), versus an only 4 percentage point increase for women. Contrary to the expectation that women's turnout would be highly responsive to external stimuli, particularly campaign intensity, these results suggest that women's turnout was less responsive to such contextual cues, perhaps due to women's greater isolation and lack of exposure. On the other hand, the results for *electoral laws* suggest women were more responsive than men to some contextual effects. What unites the findings for these two variables is the conclusion that norms against female voting were strong. An effect, such as *electoral laws*, that hampered turnout in general weighed particularly heavy on women voters who may have already been reluctant to use their new right. A factor, such as *electoral competition*, which stimulated voting overall, could not entirely overcome (or to the same extent as it did for men), the disinclination of some women to vote.

The effects of all the other contextual variables, however, are basically the same in both direction and size for men and women in 1920. The effect of *urban* place is unambiguously negative for both sexes, consistent with previous research (Andersen 1994; Butler 1924), with a similarly sized effect on men and women. Interestingly, *years since suffrage extension* has a similar impact on both sexes' propensity to vote, while the level of *previous prosuffrage activity* fails to affect either sexes' turnout rates in 1920, as indicated by BCIs that include zero.

Just four years later the already limited gendered impact of context appears to fade considerably. The effect of the *electoral laws* index is now quite similar for men and women (3 percentage points compared to 2 percentage points) and the BCIs overlap considerably. Male turnout is still more responsive to *electoral competition*, but the difference between the sexes narrows considerably (and the BCIs now overlap), largely because women's turnout becomes more responsive to electoral competition in 1924. As in 1920, *urban* contexts continue to have a similarly negative impact, and *years since suffrage extension* a similarly positive effect, on turnout levels of both sexes. We fully expected years since suffrage expansion to affect women's turnout positively, but did not expect to find such a similar effect—both in direction and size—for men. The more time that men shared the polls with women, the greater the level of male turnout.

Finally, unlike 1920, *previous prosuffrage activity* has a positive effect on turnout in 1924, with a greater impact, as expected, on women. While the coefficients are similar, the actual effect on women's turnout is almost three times greater. While it is not clear why the effect failed to register in 1920, this finding speaks to the multiple effects of movement activity. The activism of suffragists helped make it legally possible for women to vote, but they also appear to have made it more likely—at least in 1924—that women *would* vote once suffrage was won. As expected, male turnout also increased in states with a more active suffrage movement, but the largest impact is found among those whom suffragists most hoped to see enter the polls, long-disenfranchised women. Since this finding is limited to one year, we are cautious in our conclusions about the effect, but it certainly warrants continued consideration.

Discussion

We know surprisingly little about the enfranchisement of women in the first decades of the twentieth century. As Burnham laments, "It is a pity that so little relatively hard data exist pertaining to this set of issues" (1974, 1015). Our results suggest the potential for new data and methods to shed light on the process of electoral incorporation for women some 85 years later. In addition to providing the first estimates of female turnout in a number of states, we are, to our knowledge, the first to provide empirical analysis of the effect of factors such as competition, electoral laws, and previous suffrage activity on the turnout of women after enfranchisement. Some longstanding assumptions—that women would be exceptionally mobilized by electoral competition, for example—do not receive empirical support, while others—that women were particularly hampered by legal restrictions, for instance—are validated by our research.

Our unique data and methodology uncover results that lead us to rethink our understanding of the incorporation of new women voters. For example, a more accurate assessment of the impact of urbanism on women's turnout was hindered previously by data limitations. The best data on women's voting in the 1920s come from Chicago (Goldstein 1984) and Boston (Gamm 1986), which while insightful cannot speak to the urban-rural divide (as well as offering limited variation on other variables). With a data set that can distinguish truly urban areas, we find little gender difference in the effect of urbanism in 1920 or 1924.[14] Rural life does not appear to have significantly dampened women's turnout relative to that of men as was the case comparatively (Rokkan 1970; Tingsten 1937) and as some American observers predicted (e.g., Butler 1924). At the same time, rural life also was not the uniquely great stimulant to female participation that others assumed (e.g., Burner 1986). Many expected that the kinds of women who had been active in the suffrage movement (native-born, middle class, rural) would take up the voting right more readily than those who had not (immigrant, lower class, urban), even beyond the greater turnout in rural areas already observed among men. Indeed, offsetting the influence of the urban voters (especially immigrants and urban party machine supporters) had been a popular prosuffrage argument (Kraditor 1981). Our finding that nonurban women were not uniquely more likely to vote than nonurban men also casts some doubt on

[14]In urban areas, turnout rates for both sexes drop by about 12 points in 1920. Urbanism has a slightly larger effect on women in 1924: male turnout declines by 12 points in urban areas, compared to a decline of 14 points for women. The gap between male and female turnout is the same in urban and nonurban places in 1920 (17 points) and only slightly different in 1924 (20 points in urban areas compared to 18 points in nonurban areas).

the long-maintained expectations that women's suffrage benefited the Republican party. Future research will explore these possibilities by modeling male and female votes for the political parties.

In general, we find that the responsiveness of women's turnout overall was remarkably similar to that of men, and quickly became more so over time. Contrary to many expectations, new women voters were not an unpredictable or volatile addition to the electorate. In every case, women's turnout responds to the same contextual factors and in the same way. In many cases, the size of the effect is also quite similar, suggesting that women were not completely devoid of political knowledge or exposure, but entered a shared political environment where features of place influenced the decision to vote in 1920 and 1924 in much the same way.

At the same time, there is evidence that these elections were part of a broader political learning experience for women voters. The unique political experiences of women—long-time suffrage exclusion and social norms proscribing political activity—did have consequences for female turnout. At least initially, the effects of legal burdens are magnified and the impact of electoral competition circumscribed. The results for 1924, however, suggest that while female turnout continued to lag behind that of men, women's unique response to the political environment was likely short-lived. Moreover the effects of women's political experiences and condition prior to 1920 are not uniformly negative. Suffrage activism stimulated female turnout in 1924, suggesting the possibility that efforts to secure the ballot for women not only brought about legal change, but helped encourage and facilitate women's use of the ballot (as well as men's, albeit to a lesser degree) in the years after the vote was secured.

Of course, for many who had high hopes that women voters would revolutionize politics, the general similarity of male and female turnout (and the level of female turnout itself) was a source of much disappointment. Suffragists and antisuffragists alike often claimed that female enfranchisement would dramatically disrupt American politics. In the aftermath, most agreed, as do we, that women's suffrage, while important and consequential for many reasons, did not dramatically reshape the structure of electoral participation. As no less an astute observer of women in politics than Eleanor Roosevelt summarized women's experience at the polls some 20 years after ratification of the 19th Amendment, "I think it is fairly obvious that women . . . are influenced by their environment and their experience and background, just as men are" (1940, 45).

Appendix

We use a Bayesian hierarchical model to estimate male and female turnout for each geographic unit and to generate point estimates for the regression parameters. Following Wakefield (2004), each observation is treated as a separate 2×2 table with known marginals (number of men, number of women, number of voters, and number of nonvoters) and unknown interior cells (number of women voters). In the first stage of the model, the observed total number of votes is treated as the sum of the draws from two a priori independent binomial distributions—one representing females (voting with probability p_0) and one representing males (voting with probability p_1). Candidate values for the male-female turnout pairs that enter the likelihood are selected such that each pair (p_0, p_1) falls along the line that describes the logically possible combinations of male and female turnout, given total turnout and the ratio of men to women. A second constraint for candidate values is introduced at this stage. Based on a variety of newspaper reports, election returns (from Illinois and elsewhere), and an extensive literature, male turnout is expected to be higher than female turnout. Candidate pairs must satisfy the assumption that male turnout exceeds female turnout ($p_0 < p_1$). This simple constraint, coupled with the logical boundaries implied by the table marginals, suggests much narrower bounds for MCD-level outcomes than the unconstrained logical bounds would imply.

In a departure from Wakefield's approach, the second stage of the model introduces covariates, in the form of a linear model, that describe the a priori independent distributions of male and female turnout. After a vector of acceptable candidate values for p_0 and p_1 are selected, the binomial proportions of male and female turnout are transformed via the logistic. The logits are then independently regressed on the contextual factors in the model. The vector of population-weighted linear regression coefficients obtained in the second stage are retained and used in the calculation of the likelihood in the subsequent iteration of the model. New candidate values are selected, regression coefficients are updated, and this process is repeated. Candidate values and regressions parameters are updated via Markov Chain Monte Carlo (MCMC).[15]

[15]This iterative modeling strategy is implemented using source code adapted from MCMCpack, a suite of tools for Markov Chain Monte Carlo simulation developed for the R statistical package

We use an inverse gamma prior for estimating the variance of the disturbance term, and we rely on relatively flat (or uninformed) prior distributions for the regression parameters and for MCD male and female turnout (on the logit scale)—normal distributions centered around .0. This form of the prior interjects relatively little nonsample influence into the resulting posterior distribution, which is desirable given our uncertainty about both the magnitude of the difference between male and female turnout and the relative impact of the contextual effects.

MCMC methods exploit the enormous recent advances in computational power to simulate solutions to complex integration problems implied by high-dimension Bayesian models (see Gill 2002). MCMC simulations require a "burn-in" period and a sufficient number of iterations to sample from the target distribution. For this article each simulation was 10,000 iterations with the first 2,500 iterations discarded as the burn-in. One-third of the remaining 7,500 observations were monitored to recover the parameter estimates. MCMC simulations require some inspection of the convergence properties of the Markov chain. Assessing convergence of these chains is subjective and the subject of considerable work among users of MCMC methods (see Gill 2002, chapter 11, for an overview). We use both true values (above, in text) and canonical convergence diagnostics. Convergence properties of the simulations are discussed in Web Appendix B available on the journal web site. The convergence diagnostics and comparison of estimates from longer chains (100,000 iterations) indicate convergence.

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and described in Martin and Quinn (2003). They implement a hierarchical modeling strategy for ecological inference and, separately, a Markov Chain Monte Carlo (MCMC) regression technique. The procedure developed for the article relies on components of both models. The source code is available from the authors.

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