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Do Electoral Quotas Work after They Are Withdrawn? Evidence from a Natural Experiment in India

RIKHIL R. BHAVNANI *Stanford University*

Do electoral quotas for women alter women's chances of winning elections after they are withdrawn? I answer this question by examining an unusual natural experiment in India in which randomly chosen seats in local legislatures are set aside for women for one election at a time. Using data from Mumbai, I find that the probability of a woman winning office conditional on the constituency being reserved for women in the previous election is approximately five times the probability of a woman winning office if the constituency had not been reserved for women. I also explore tentative evidence on the mechanisms by which reservations affect women's ability to win elections. The data suggest that reservations work in part by introducing into politics women who are able to win elections after reservations are withdrawn and by allowing parties to learn that women can win elections.

Electoral quotas, which are used in more than 100 countries around the world, increase the representation of target groups in legislatures. But do the beneficial effects of quotas persist after they are withdrawn? Answering this question is important because quotas are often thought of as temporary measures, used to improve the lot of particular groups of people until they can take care of themselves. Target groups could secure representation for themselves after quotas lapse as the constraints that previously prevented their effective political voice are mitigated, either by broad social processes or by quotas themselves. Therefore, a thorough accounting of the costs and benefits of quotas must investigate whether quotas themselves can continue to boost the representation of target groups in legislatures after they are withdrawn. This question is particularly important because quotas restrict the opportunities available to nontarget groups and might, in fact, cause a backlash against beneficiaries (Weiner 1978; Wilkinson 2000).

Little evaluation of the lasting effects of quotas has been conducted for at least two reasons. First, despite intentions to the contrary, quotas are rarely withdrawn.[1] This makes it difficult to assess what would happen to target groups once quotas have been eliminated. Second, because incumbent politicians have the incentive to implement quotas in areas where target groups would do well anyway, simple comparisons of seats with and without quotas would probably yield biased estimates of the effects of quotas.

I circumvent these problems by examining the results of a unique policy initiative in India that sets aside randomly chosen seats in local governments for women for one election at a time. I use this natural experiment to determine the effect of "reservations" on the chances of women winning elections after quotas have lapsed. Using data from Mumbai, I find that the chances of a woman winning office conditional on the constituency being reserved for women previously are approximately five times the chances of a woman winning office if the constituency had not been reserved for women. I also explore suggestive evidence on the mechanisms by which reservations might improve women's ability to win elections. I find that reservations mainly work through introducing into politics a cohort of women that are able to secure party tickets and win office after reservations lapse. This finding speaks to the external validity of my results. It also suggests that the degree to which the beneficial effects of reservations persist will depend on the extent to which the cohort of women that enter politics while reservations are in effect continue to run for office after reservations lapse. Because quotas have continuing positive effects on women's representation after they are withdrawn, the costs of this remedy for inequalities in political representation—in terms of preventing men from running for office—need only be temporary. This finding should provide succor to those that deplore the reverse discrimination (against men, in this case) that quotas institute.

I proceed as follows. I explore the related literature in the next section and introduce the context in which I explore the next-election effects of reservations in the section after that. Next, I describe the data and empirical strategy, and present my findings on the next-election effects of reservations. I then explore

Rikhil R. Bhavnani is a Ph.D. candidate in the Department of Political Science, Stanford University, Encina Hall West, Room 100, Stanford, CA 94305 (rbhavnani@stanford.edu).

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[1] The Indian constitution, for example, originally mandated that seats be set aside in India's national and state legislatures for "scheduled castes" and "scheduled tribes" (so called because these peoples are listed in a schedule or annex to the constitution of India) for ten years, until 1960. The constitution has been repeatedly amended, however, to delay the withdrawal of quotas, which are still in force today. Similarly, although affirmative action programs in the United States were conceived as temporary measures, many of these have been in effect continuously since the 1960s.

the channels through which reservations might improve women's chances of winning elections, and then conclude.

LITERATURE REVIEW

This article contributes to the substantial literature on remedies for inequalities in political representation. Although a large portion of this literature has devoted itself to developing rationales for various remedies for inequalities in political representation (e.g., see Mansbridge 2005 for a robust defense of quotas for women) and to explaining the mechanisms by which some of these remedies, such as gender quotas, have come to be used the world over (Krook 2006), there is also a substantial literature on the effects of such remedies. The literature on majority–minority districting, for example, examines the partisan and policy effects of such districting strategies (Cameron, Epstein, and O'Halloran 1996; Lublin and Voss 2003; Shotts 2003), whereas the literature on quotas examines their effects on the provision of public goods (Chattopadhyay and Duflo 2003, 2004), attitudes toward female politicians (Beaman et al. 2008), the targeting of social expenditures and transfers (Bardhan, Mookherjee, and Torrado 2005; Pande 2003), candidate quality (Ban and Rao 2008), and several other outcomes (Ghatak and Ghatak 2002; Jha and Mathur 1999; S. Singh 2003). Although much of this literature examines the effects of remedies for inequalities in political representation while they are in place (e.g., while quotas are in force, or while districts are gerrymandered), I depart from this literature to investigate the effect of quotas for women after quotas are withdrawn.

Insofar as I examine the mechanisms by which quotas affect the odds of women securing political office, this article relates to an even broader literature that aims to understand the causes of the underrepresentation of various peoples in politics. This literature includes works on the determinants of people's decisions to run for office (Chhibber 2002; Fox and Lawless 2004), the literature on party (Sanbonmatsu 2006) and voter perceptions (Barry, Honour, and Palnitkar 2004; Beaman et al. 2008; Hajnal 2001) of minority candidates, and the literature on changing social norms (Mackie 1996). This article contributes to this literature by examining the effects of an exogenous and random shock (the quota) on the election process. By examining the behavior of relevant actors in wards with and without quotas, I am able to improve our understanding of the constraints that women face in being elected.

In terms of methodology, this article analyzes an atypical natural experiment, where those in the treatment group were chosen through an explicit lottery rather than through an intervention that was "as if" random. In so doing, the article joins a spate of recent works by economists that have examined the effects of such lotteries—often employed by governments to ensure apolitical selection of beneficiaries, rather than to facilitate policy evaluation—on various outcomes (Clingingsmith, Khwaja, and Kremer 2009; McKenzie, Gibson, and Stillman 2006).

Last, this article addresses a weakness of the literature on institutions. This literature highlights the effects of exogenous factors—such as colonialism, diseases, and wars—on institutions and, in turn, their effect on politics and economics. Although this research agenda helps identify important effects, it provides little room for human agency and policy advice: we cannot recommend that states acquire colonial subjugators or new geographies, or that they engage in wars. I, therefore, focus on trying to specify the effect of a deliberate policy (reservations) on a social institution (discrimination).[2]

CONTEXT

Inspired by India's precolonial history of local self-government and Mahatma Gandhi's vision of an India made up of self-sustaining "village republics," the Indian constitution of 1949 directed the state to work toward the establishment of vibrant local governments. Most of these governments—particularly at the village, block, and district levels—existed on paper since the 1950s, constituted without elections and bereft of substantial powers. The 73rd and 74th constitutional amendments, passed in 1992, directed India's state governments to conduct elections at local levels, devolved powers of expenditure and oversight to these bodies, and mandated the reservation of one-third of the seats in these local bodies for women.[3,4] Because only female candidates can run for election in wards reserved for women, only women are elected from these seats.

A silent revolution in local governance has followed. Two to four elections have been held for more than an estimated two million seats in more than 220,000 local

[2] The norm of discrimination against women in India is an institution in the sense that it is a commonly known "rule of the game" that guides people's behavior.

[3] These amendments also reserve seats for members of the scheduled castes and tribes. I restrict my analysis to the effect of reservations for women, however, because data on castes of voters and candidates in nonreserved seats are unavailable, because the fact that caste identification can be fluid makes it difficult to isolate the impact of caste-based reservations on the political process, and because seats reserved on the basis of caste are chosen on a nonrandom basis.

[4] A natural question that arises is why the overwhelmingly male political class, which stood to lose its near monopoly on representation, agreed to reservations for women in the first place? The answer might partly lie with the strength of the women's movement in India (Barry, Honour, and Palnitkar 2004), although this is disputed (Sen 2000, for example, argues that the women's movement had little to do with the introduction of quotas) and can also probably (I hypothesize) be traced to the fact that seats were to be reserved for women in local—rather than in state or national—legislatures. Because most of these bodies were moribund until the early 1990s, politicians probably did not perceive reservations for women to be a threat to their future job security (whether this has proved to be the case is an interesting, researchable question). This explanation is consistent with the fact that although reservations for women in local bodies were mandated in 1992, a bill mandating reservations for women in state and national legislatures has been repeatedly scuttled for want of political support.

government bodies across the country since 1992.[5] Women's representation, which had ranged between 3% and 9% of house strength in India's state and national legislatures, now stands at more than one-third of seats in local bodies.

Seats reserved for women are randomly chosen and change from election to election. This ensures that the process is fair, to the extent that every seat has an equal chance of being reserved, and that men in reserved constituencies are not permanently excluded from office.

I consider the impact of reservations for women on local politics in Mumbai. Mumbai is located on India's west coast, in the state of Maharashtra. With a population of approximately 13 million, it is India's largest city and one of the largest in the world. Its municipal corporation was established in 1888, and elections for its "corporators" or members have been conducted—on a first-past-the-post basis for single member districts—more or less every five years since. Through its executive wing, the Brihanmumbai (Greater Mumbai) Municipal Corporation (BMC) is responsible for the provision of most of the city's essential services, including roads, water, sanitation, education, and health. It raises approximately $2.5 billion in revenues every year for these purposes, which makes it the largest local government in India. As is the case with many local governments in India, however, the deliberative wing of the BMC is weak.

I trace the impact of reservations in 1997 on electoral outcomes in 2002. Although one-third of the seats in the city's municipal corporation were reserved for women in 1997 and 2002 per the constitutional amendments described previously, the city's experience with reservations started earlier, in 1992, when 30% of the seats were reserved for women under a state election law that was subsequently superseded by the national constitutional amendments. My analysis, however, will be restricted to a comparison of 1997 and 2002 election results for reasons that I detail in the next section.

Local elections in India are an appropriate choice to study whether reservations have a sustained impact on the ability of women to win office due to the confluence of two unique factors. First, although quotas are rarely withdrawn once they are introduced, the fact that seats reserved for women in India change in each election means that quotas are, in fact, withdrawn in some instances. Second, because seats are reserved for women through a randomized process, comparisons of wards that were reserved and not reserved do not suffer from selection effects that would be endemic to such comparisons in other contexts.

Although an identical analysis could, in principle, be conducted using data from other regions in India, the places that we could examine are surprisingly limited, for three reasons. First, few local election authorities maintain detailed historical election data. I managed to retrieve detailed 1997 and 2002 election data for Mumbai from the BMC after much effort. Second, the analysis would probably have to be limited to city elections because conducting such an analysis for rural areas would involve the examination of too large a geographic area (encompassing many small villages because each village has few legislators) for comparisons to be meaningful. Third, the electoral systems in many Indian cities have changed multiple times in the past two decades, rendering comparisons between electoral outcomes over time difficult. Therefore, Mumbai offers us an unusual opportunity to identify the effects of randomized quotas.

DATA AND EMPIRICAL STRATEGY

To test whether reservations for women affected the probability of women winning subsequent elections, I collected data from the Maharashtra State Election Commission and BMC. The data collected were, in a mix of Marathi and English and for the 1997 and 2002 elections, official "result sheets" for each of Mumbai's electoral wards, Maharashtra gazette notifications of ward boundaries, the reservation status for various seats and candidate lists, and internal documents of the Election Office of the BMC. For each ward, I coded the names, sex, party, incumbency status, and vote tallies for every candidate in the 1997 and 2002 elections. This yielded 2,725 and 2,065 records for the 1997 and 2002 elections, respectively. I also coded, for each ward, the reservation status and the total number of eligible voters: this yielded 221 records for the 1997 elections, and 227 records for the 2002 elections.

The empirical strategy of this article is straightforward because seats reserved for women were randomly chosen. More specifically, the reservation process proceeded as follows. First, constituencies (also called seats or wards) with the highest concentration of Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs) were reserved for SCs, STs, and OBCs, respectively.[6] The proportion of seats reserved for these groups was set equal to the proportion of these groups in the city's population. Second, within the four groups created by the previous step (the fourth group contained seats that were open to all regardless of caste or class), 33% of the seats were randomly reserved for women—independently, and with equal probability—in 1997 and 2002. Table 1 summarizes the reservation status for all the BMC wards in the three elections. It shows that the result of this process was that 33% of the wards were reserved for women through randomized, stratified, and independent draws in 1997 and 2002.

That such randomization really did occur is evidenced by the fact that reserved and unreserved wards in 2002 were statistically indistinguishable from one another in terms of a number of 1997 election-related characteristics, including their reservation status in

[5] The number of elections held for local bodies varies across India as different regions follow different election schedules.

[6] Although people are defined as being OBC if they meet certain caste, education, and income criteria, in practice and for elections, only the caste criterion is used to determine whether a candidate is an OBC.

TABLE 1. Constituencywise Reservations in 1997 and 2002

	1997		2002	
Seats reserved for	Number	Percent	Number	Percent
Open, regardless of caste	145	65.6	149	64.8
Of which: Reserved for women	48	21.7	50	21.2
Other Backward Classes	60	27.1	61	27.3
Of which: Reserved for women	20	10.0	20	9.3
Scheduled Castes	14	6.3	15	7.1
Of which: Reserved for women	4	1.8	5	2.2
Scheduled Tribes	2	0.9	2	0.9
Of which: Reserved for women	1	0.5	1	0.4
Total	221	100.0	227	100.0
Reserved for women	73	33.9	76	33.0
Other reservations	51	22.2	52	23.4
Open to all	97	43.9	99	43.6

Note: Constituencies reserved for Other Backward Classes, Scheduled Castes, and Schedule Tribes were ones with the highest concentrations of Other Backward Classes, Scheduled Castes, and Schedule Tribes, respectively. Constituencies were reserved for women using random, stratified, and independent draws in 1997 and 2002. See text for details.

1997, their track record of electing women to office, and their party affiliation. I could not conduct such an analysis to verify that the 1997 reservations were orthogonal to 1992 election characteristics due to changed ward boundaries between the elections. However, similar tests comparing the socioeconomic characteristics of reserved and unreserved wards across a number of different locales and election years in India have shown that reserved and unreserved wards are statistically indistinguishable from one another (Chattopadhyay and Duflo 2003; Pande 2003).

Furthermore, qualitative evidence for the probity of the randomization process comes from the fact that the 2002 BMC elections saw the reservation of the seats of the sitting male mayor and deputy mayor, and 18 other male BMC incumbents (Naik and Lokhande 2001). The reservation of their seats, and the norm that representatives be resident of the ward from which they are running for office, meant that these politicians were barred from running for local political office in 2002, which is an outcome that we may safely assume they would have prevented if they could have. Given their inability to do so, we may assume that the reservations process was not tampered with.[7]

Although the contemporaneous, within-election effects of reservations on political outcomes can be estimated by comparing reserved and open wards in 1997 and 2002, the challenge lies in devising a way to estimate the next-election effects of reservations. To do this, I restrict my analysis to wards in 2002 that were not reserved or "open," and compare those that were reserved in 1997 (the treatment wards, $n = 37$) with those that were not reserved in 1997 (control wards, $n = 81$). In comparing these wards, I use difference in proportions tests for dichotomous data, and difference of means tests (*t*-tests) for continuous data.

To make the experimental setup clearer, consider the "transition matrix" in Figure 1, which notes the reservation status of wards in 1997 and 2002. The matrix shows that 81 wards were randomly declared "open" in 1997 and 2002 (the control group), and 37 wards were randomly reserved for women in 1997 and were open in 2002 (the treatment group). Comparing these wards allows me to test my central question—whether the 1997 reservations increased the probability that women win elections in 2002.[8,9]

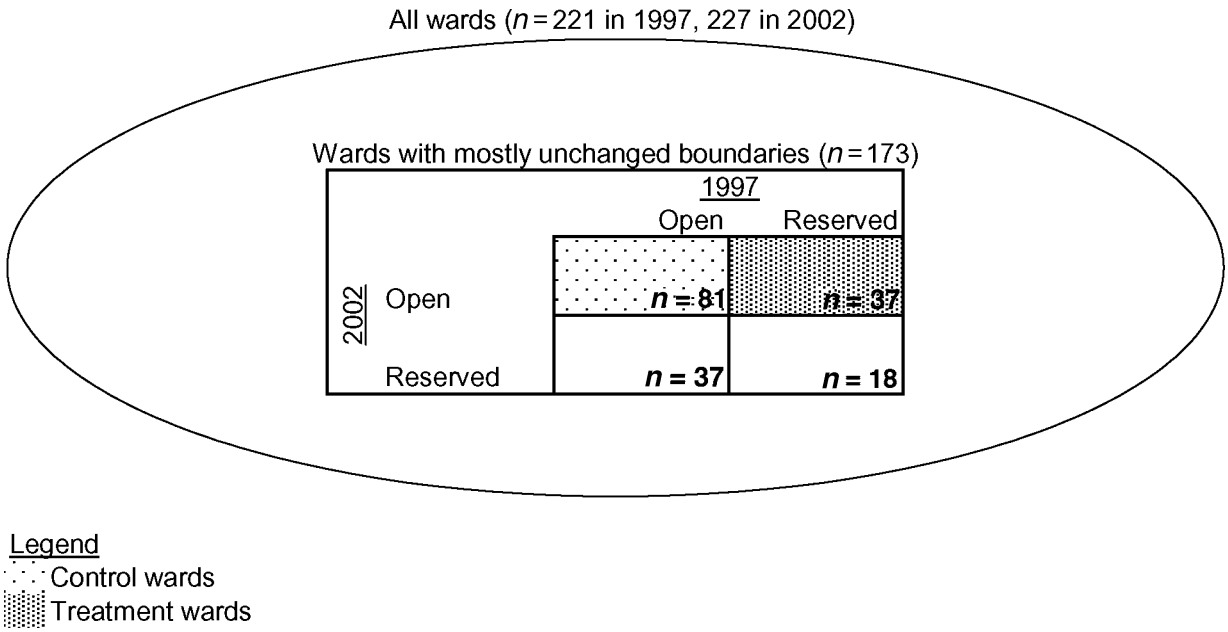
Randomization addresses the concern of controlling for heterogeneity in the baseline characteristics of treatment and control groups by ensuring that assignment to the reserved wards group is orthogonal to ward characteristics that might dispose wards to elect women. If reservations were not randomized, political

[7] Furthermore, the electoral redistricting process was conducted just before the 1997 elections and substantially changed electoral boundaries. This made any strategic tampering of the reservations process difficult.

[8] As Figure 1 indicates, I restrict my attention to the 173 of 221 (78%) of wards whose boundaries remained largely unchanged between 1997 and 2002. A slight redrawing of boundaries was conducted just before the 2002 elections for reapportionment purposes, by bureaucrats, without political interference, and only took into account differences in the draft and final 1991 census results. By restricting our attention to wards whose boundaries remained unchanged between elections, I am assuming that these wards are representative of all wards. That this is a reasonable assumption is supported by the fact that the mean election-related characteristics of the wards whose boundaries remained the same and those that changed are statistically indistinguishable from one another.

[9] That the reserved wards were independently chosen in 1997 and 2002 is reflected in the size of the treatment and control groups. Note that if reservations are perfectly random, we would expect the treatment wards to number Pr(a ward is reserved for women in 1997) * Pr(a ward is not reserved for women in 2002) * number of wards that have nearly identical boundaries in 1997 and 2002 = $\frac{1}{3} * \frac{2}{3} * 173 \approx 38$ (as compared with the actual 37 treatment wards). Similarly, we would expect the control wards to number Pr(a ward is not reserved for women in 1997) * Pr(a ward is not reserved for women in 2002) * number of wards that have nearly identical boundaries in 1997 and 2002 = $\frac{2}{3} * \frac{2}{3} * 173 \approx 77$ (as compared with the actual 81 control wards). I am also unable to reject the hypothesis that the reservations processes in 1997 and 2002 were independent using a chi-squared test.

FIGURE 1. Control and Treatment Groups to Calculate the Next-Election Effects of Reservations



parties would have the incentive to run female candidates in wards that would have elected women in the absence of reservations, in which case the estimated effect of reservations on women's chances of winning subsequent elections would be attenuated. The randomization of reservations addresses such concerns.

I do not incorporate the results from the 1992 or the 2007 BMC elections in my analysis because electoral wards from these years are not comparable to wards from other years. That this is the case is not surprising because the ward boundaries were substantially revised in 1997 and in 2007 in order to take into account the new population figures from the 1991 and 2001 censuses, respectively.[10] I also do not use the 1992 data because the secondary literature (Sankaran 1992) and my discussions with BMC officials suggest that the reservations process was not random in 1992.[11] I employ data from 1997 and 2002 for my analysis instead because ward boundaries in these years were comparable to one another, and because seats were randomly chosen to be reserved in these years.

Although the randomized manner in which quotas were implemented maximizes the internal validity of my analysis, the results should also be externally valid. My investigation of the mechanisms through which reservations might boost women's chances of winning office in subsequent elections hints at the conditions under which the effects of reservations are likely to persist and to hold elsewhere. I discuss these conditions in the concluding section.

To confirm that reservations were indeed implemented in practice, consider Table 2, which shows the contemporaneous, within-election effects of reservations in 1997 and 2002. The first row of Table 2 indicates that reservations had their primary intended effects: women became corporators in all seats set aside for them. In comparison, women won 3.4% and 8.6% of the open seats in the 1997 and 2002 elections, respectively.[12] The difference in average outcomes between the reserved and open wards is statistically significant at the 1% level using one-sided difference of proportions tests. This is not surprising given that only women were eligible to run for office in reserved wards. Similarly, and consistent with the previous result, the number and percentage of female candidates in reserved seats (rows 3 and 5), and the total and average percentage of votes received by female candidates (rows 6 and 7), are higher to statistically significant degrees (using one-sided difference of means tests) in reserved seats than in open seats. Although reserved constituencies are also somewhat less competitive than open constituencies (rows 4 and 9), they are still competitive.

These results suggest why we might expect reservations to have effects on subsequent elections. The elections in reserved seats were real, rather than sham, elections. For the first time, because of reservations and

[10] The 1992 ward boundaries differed substantially from wards in subsequent years also because the size of the BMC's legislative wing was increased from 170 corporators in 1992 to 221 corporators in 1997.

[11] Specifically, Sankaran (1992) suggests that the seats reserved were ones where women were "in a majority" (189). I was unable to verify that this was the assignment rule for reservation status from another source, however. In discussions, BMC officials suggested that the reservations process in 1992 followed a complicated, nonrandom formula, the specifics of which were not known to them at the time.

[12] Because compliance with the reservation policy is perfect, the calculated effects of the treatment are—unusually for an experimental study—average treatment effects, not the more usual intention-to-treat effects.

TABLE 2. Contemporaneous, Within-Election Effects of Reservations in 1997 and 2002

	1997 Elections			2002 Elections		
	Reserved	Open	Difference	Reserved	Open	Difference
1 Percentage of female winners	100.0	3.4	96.6***	100.0	8.6	91.4***
2 Percentage of wards where at least one woman ran for office	100.0	43.9	56.1***	100.0	51.7	48.3***
3 Number of female candidates	8.2	0.7	7.5***	7.0	0.8	6.2***
4 Number of candidates	8.2	14.4	−6.2***	7.0	10.1	−3.1***
5 Female candidates as a percentage of candidates	100.0	4.5	95.5***	100.0	7.7	92.3***
6 Total percentage of votes received by female candidates	100.0	2.9	97.1***	100.0	6.9	93.1***
7 Average percentage of votes received by female candidates	16.1	2.0	14.1***	17.3	4.4	12.8***
8 Turnout, in percent of registered voters	42.5	47.0	−4.5**	41.2	42.6	−1.4*
9 Winning candidate vote margin	13.9	13.0	0.9	16.6	14.1	2.4
10 Number of wards	73	148	221	76	151	227

Note: *significant at 10%, **significant at 5%, ***significant at 1% using one-sided difference in proportions and means tests. Only women could run for office in reserved constituencies; men and women could run for office in open constituencies. Constituencies were reserved for women using random, stratified, and independent draws in 1997 and 2002. See text for details.

in wards with reservations, a stream of viable female candidates entered politics, the city's leading parties nominated female candidates, voters came out in substantial numbers to vote for women, and seats were won by women. Reservations were perfectly implemented in the sense that only women were allowed to run for office in reserved seats, and women were elected in all seats reserved for them. Moreover, that the percentage of open seats in which women won elections increased from 3.4% in 1997 to 8.6% in 2002 (this increase is statistically greater than zero at the 5% level) indicates the possible next-election impacts of the 1997 reservations, which is what the rest of my article analyzes.[13]

NEXT-ELECTION EFFECTS OF RESERVATIONS

Table 3 details the result of the natural experiment central to this article. It tests for the continuing effects of the 1997 reservations on various aspects of the 2002 elections. The first row reveals the main result of this article: although approximately 21.6% of wards that were reserved for women in 1997 but were open in 2002 (treatment wards) were won by women, only 3.7% of wards that were open in 1997 and 2002 (control wards) were won by women. Women's chances of winning ward elections are therefore more that quintupled by the 1997 reservations. The increase in the chances of a woman winning an election is statistically significant at the 1% level.[14]

A number of other indicators are consistent with this result. As row 2 of Table 3 indicates, the percentage of treatment wards where at least one woman ran for office (73), for example, is double the percentage of control wards where at least one woman ran for office (36). The average number (row 3) and percentage of female candidates (row 5) that ran for office in treatment wards is also double the figure in control wards. Remarkably, although female candidates were competitive in 43% of treatment wards, they were competitive in just 14% of control wards (row 10).[15]

Interestingly, the women who won elections in treatment wards did so equally across the four stratification layers (open wards, and wards reserved for OBCs, SCs, and STs) that the 1997 reservations were randomized within. A chi-squared test comparing the distribution of treatment seats in 2002 by stratification layer and treatment seats where women won in 2002 by stratification layer is unable to reject the possibility that the distributions are equal.

That the 1997 reservations affected the 2002 elections is corroborated by a comparison of wards that were reserved in 1997 and 2002 with wards that were not reserved in 1997 and were reserved in 2002. This analysis reveals that the effects of reservations in 1997 are noticeable five years after, even if we restrict our attention to wards that were reserved in 2002. For example, the number of female candidates in wards that were reserved in 1997 (7.4) was higher than the average number of female candidates in wards that were open in 1997 (6.5).

It is important to note that because the reservation status of wards in 1997 and 2002 was random, the effect of the reservations in 1992 will have equally "shown up" in constituencies that are open and reserved in

[13] Although a naive estimate of the effects of the 1997 reservations might be the difference between these two figures, this estimate is biased upward to the extent that women have been gradually increasing their participation in local politics and is biased downward to the extent that not all open wards in 2002 were previously reserved for women.

[14] The effect of reservations on women's representation might be biased downward if there are positive spillover effects of reservations from treatment to control wards. Positive spillovers might, for example, stem from the demonstration that women are competent legislators.

[15] Competitive candidates are defined as those that received 5% or more of their constituency's vote.

TABLE 3. Next-Election Effects of the 1997 Reservations on the 2002 Elections

	The Experiment		
	Open in 1997, Open in 2002	Reserved in 1997, Open in 2002	Difference
1 Percentage of female winners	3.7	21.6	17.9***
2 Percentage of wards where at least one woman ran for office	35.8	73.0	37.2***
3 Number of female candidates	0.5	1.1	0.7***
4 Number of candidates	9.1	10.6	1.5
5 Female candidates as a percentage of candidates	4.4	11.9	7.4***
6 Number of competitive female candidates[1]	0.1	0.5	0.3***
7 Number of competitive candidates[1]	3.9	4.1	0.2
8 Competitive female candidates as a percentage of competitive candidates[1]	3.2	11.8	8.6***
9 Number of new female candidates[2]	0.3	0.7	0.4***
10 Percentage of wards where any female candidate was competitive[1]	13.6	43.2	29.7***
11 Total percentage of votes received by female candidates	3.3	15.0	11.7***
12 Average percentage of votes received by female candidates	2.4	10.0	7.5***
13 Turnout, in percent of registered voters	42.2	41.6	−0.6
14 Winning candidate vote percentage	42.8	41.0	−1.9
15 Winning candidate vote margin	15.3	13.5	−1.8
16 Number of wards	81	37	

Note: *significant at 10%, **significant at 5%, ***significant at 1% using one-sided difference in proportions and means tests. Only women could run for office in reserved constituencies; men and women could run for office in open constituencies. Constituencies were reserved for women using a random, stratified, and independent draws in 1997 and 2002. See text for details.
[1]Competitive candidates are defined as those that received 5% or more of their constituency's vote.
[2]Candidates are coded as "new" if they did not run in 1997.

1997 and 2002. The estimated impact of the 1997 reservations on electoral outcomes in 2002 is accurate then, but is conditional on there having been reservations in 1992.

So far, I have presented striking evidence that quotas improve the chances of women winning elections even after quotas are withdrawn. A natural question that arises from such analysis, however, is what are the possible mechanisms through which reservations impact subsequent elections? I turn to exploring this question next.

MECHANISMS THROUGH WHICH RESERVATIONS WORK

To structure the exploration of how reservations have their next-election effects, consider the steps that women have to go through in order to be elected to office. Women must first decide whether they want to run for office. Those who decide to run for office approach the decision makers within their household (usually the men—husbands or fathers-in-law) in order to gain their assent. If this is granted, they may approach the political party of their choice for the party's nomination (known as the party "ticket") for the ward in which they reside. Alternatively, parties might approach prospective candidates to run for office (possibly based on the recommendations of local party cadres—although the ultimate decision on whether a candidate can run for office vests with the party's leadership), in which case prospective candidates would confer with their families after being approached by parties. Parties can nominate a maximum of one candidate for each electoral ward. Candidates who secure party tickets compete with one another at the polls, where incumbents might have an advantage and voters choose between candidates. The candidate who garners a plurality of votes wins office. Corporators may try to use their time in office to build an incumbency advantage. Five years later, elections are held again. Although this is a radically simplified representation of a complex election process, it captures its essential features.

In light of this stylized representation of elections, we may discern four hurdles that women face in their path to power. These might occur as women face entrenched male incumbents, or as they face opposition to their candidacies from people in their households, from parties, and among voters. I explain how reservations might improve the performance of women at each stage and provide preliminary tests of these conjectures below.

Briefly, I find that reservations largely work by introducing into politics a group of female candidates who are able to run for and win elections even after reservations lapse, and by allowing parties to learn that women can win elections.

This analysis is not as straightforward as the analysis presented previously because although the reservations policy ensures that only women run for office (and are therefore elected) from reserved seats, the policy does not directly manipulate variables such as the number of female candidates or voter registration by ward, both of which, as discussed later, might be intermediate mechanisms through which reservations influence elections. The impact of such intervening variables,

TABLE 4. Logistic Analysis of the Determinants of Whether a Female Corporator Was Elected in 2002

Dependent variable: Dummy for whether a female corporator was elected in 2002	1	2	3	4	5	6	7
Dummy for treatment	1.970 [0.711]***	0.798 [1.017]	1.166 [0.743]	2.636 [0.838]***	8.451 [3.612]**	0.579 [0.932]	11.073 [6.277]*
Dummy for whether the male incumbent ran for office		−0.247 [1.428]					0.538 [1.546]
Dummy for whether the female incumbent ran for office		3.570 [0.928]***				2.841 [0.934]***	2.584 [1.119]**
Dummy for whether any female candidate ran for office			−1.042 [2.406]				−0.622 [2.808]
Number of female candidates			4.305 [2.068]**			5.292 [2.555]**	3.216 [2.875]
Number of female candidates squared			−0.853 [0.490]*			−1.201 [0.630]*	−0.626 [0.716]
Turnout in 2002, in percent of registered voters				0.107 [0.067]			0.164 [0.156]
Change in male voters registered between 1997 and 2002 elections, in percent				−129.610 [74.398]*			44.847 [71.856]
Change in female voters registered between 1997 and 2002 elections, in percent				58.781 [68.363]			−49.465 [81.917]
Turnout in 1997, in percent of registered voters					0.080 [0.057]		−0.023 [0.102]
Dummy for treatment x Turnout in 1997, in percent of registered voters					−0.147 [0.078]*		−0.255 [0.135]*
Constant	−3.258 [0.588]***	−3.704 [1.010]***	−5.073 [1.442]***	−7.887 [3.069]**	−7.099 [2.942]**	−7.455 [2.368]***	−11.225 [6.744]*
Number of observations	118	118	118	118	118	118	118
Pseudo *R*-squared	0.12	0.40	—	0.22	0.17	0.52	—

Note: Regressions 3 and 7 use Firth's penalized-likelihood approach to deal with a separation problem. See footnote 22 for details. Standard errors in brackets. *significant at 10%, **significant at 5%, ***significant at 1%.

however, might be causal to the degree that they are determined temporally prior to the election of women and might influence the probability of women winning office. To deal with the challenge of observational data, I supplement the difference in proportions and means tests used previously with multivariate regressions. Although this analysis does not produce definitive results, it provides us with a starting point to think about the mechanisms through which quotas affect subsequent elections, and indicates the conditions under which we might expect the effects of reservations to hold and persist.

Incumbency Hurdle

Six of the eight women who won elections from treatment wards in 2002 were incumbents. The results in Table 4 corroborate this finding. I first use a logistic model, with a dummy for whether the winners in the 2002 elections were women as the dependent variable and with observations restricted to wards that were not reserved in 2002, to replicate the main result of the article. Regression 1 shows that quotas for women in 1997 (the treatment) are a significant predictor of the dependent variable. Consistent with the main result, the coefficient of 1.970 on the treatment dummy means that having a ward reserved for women in 1997 increased women's chances of winning the election by 18 percentage points, from 4% to 22% in 2002. Regression 2 adds dummies for whether a male or a female incumbent corporator ran for office to the base logistic regression. The dummy for whether a female corporator ran for office yields a positive and statistically significant coefficient. Together, these figures indicate that whether a female incumbent ran for office explains much of the dependent variable.

Despite these results, it would be incorrect to conclude that an incumbency advantage explains the improved election prospects of women for at least two reasons. First, comparisons of incumbents and nonincumbents probably suffer from a selection bias. Incumbents, for example, might do better than nonincumbents because they have superior abilities rather than because of their status as incumbents. Second, we, in fact, have reasons to believe that incumbents in BMC elections suffer from an incumbency disadvantage,[16]

[16] For the 2002 BMC elections, only 55% of the incumbents from 1997 (who were not prevented from running for office by reservations) ran for office, of which only 56% won. In comparison,

a pattern that has been shown to hold in the case of India's national and state elections (Linden 2004; Uppal 2005).[17] In light of this, perhaps women suffer less of an incumbency disadvantage than men? This possibility too is not sustained by the data.[18]

All this suggests that reservations mainly work through selecting a group of female winners in 1997 that are able to win office in 2002 after reservations have lapsed. The number of women who would have been able to win office in the absence of reservations appears to have been so low that the mere introduction of a group of female candidates into politics under the 1997 reservations policy—regardless of their propensity to develop an incumbency advantage or disadvantage—increased the proportion of women that won office in 2002.

Individual and Familial Hurdles

Women's underrepresentation in politics may be caused by a dearth of female candidates. Women may not run for office for a number of reasons, including because they do not view themselves as being qualified to run (Fox and Lawless 2004); because they are unable to negotiate an independent space for themselves within their households (Chhibber 2002); or because their husbands, fathers-in-law, or mothers-in-law disapprove of their candidatures (Honour, Barry, and Palnitkar 1999). Reservations might increase the number of women who try to run for office by relaxing these constraints.[19] Hence, we would expect treatment wards to have more women candidates, including "new" women candidates that ran for the first time in 2002, than control wards. These expectations are confirmed by the data.[20]

To ascertain whether the 1997 reservations increased the number of new women that ran for office in 2002, I compare the 2002 candidate list to the 1997 one in order to code whether those who ran for office in 2002 ran in 1997 as well.[21] This analysis reveals that treatment wards had a higher average number of new female candidates (i.e., candidates that did not run in 1997) than did control wards (row 9 of Table 3). Consistent with this result, control wards had a lower average number of female candidates (row 3) and competitive female candidates (row 6) run for office per ward than did treatment wards. These differences are statistically significant using one-tailed difference of means tests at the 1% level. This suggests that reservations might have altered the chances of women securing office in 2002 by continuing to expand the pool of female candidates that run for office even after reservations lapsed. Indeed, treatment wards that elected female candidates had the greatest number of female candidates per ward in 2002 (1.75).

Further evidence for this mechanism is presented in regression 3 of Table 4, which adds controls for whether any female candidate ran for office, the number of female candidates, and the number of female candidates squared to the base regression.[22] The positive and

88% of incumbent legislators in the United States—where incumbents have a well-documented advantage—ran for office again, of which 90% were reelected (Uppal 2005).

I am unable to precisely estimate whether BMC legislators suffer from an incumbency disadvantage or not because the state-of-the-art technique for determining the extent of incumbency disadvantage, which controls for selection effects, is to use regression discontinuity design to compare the electoral performance of winners and near winners of elections over time. This technique reduces the data set to too small a size to yield statistically meaningful results.

[17] Although the presence of an incumbency disadvantage is somewhat surprising—particularly for scholars of U.S. politics—we can imagine several theoretical reasons why incumbents could be disadvantaged. Chhibber (1999), for example, argues that incumbents may be disadvantaged in India due to the absence of secondary associations that could help incumbents mobilize and lock in votes. This explanation is consistent with Fenno's (1992) understanding that U.S. Congressmen secure an incumbency advantage through creating a feeling of solidarity between themselves and their constituents, a feeling that secondary associations might foster. Linden (2004) and Uppal (2005), in contrast, argue that the disadvantage that incumbents face in India stems from intense political competition, which makes investing in incumbency advantage unprofitable for incumbents because election results are not predictable.

[18] Although 47% of male incumbents from 1997 ran for office in 2002, only 38% of female incumbents ran in the 2002 election. Of these, although 55% of male incumbents won office in 2002, 60% of female incumbents won office in 2002. The differences in these figures by sex are small and are statistically insignificant.

[19] The clearest evidence of this mechanism at work would be in wards where there are close elections. Because the winner of close elections may be viewed as being "randomly" chosen from among the top two candidates in the election, an exogenous increase in the number of female candidates that run for office—caused by the reservations policy—should increase the probability that a woman is in the top two candidates in an election, and therefore the probability that a woman wins office. Unfortunately, my data do not provide me with enough statistical power to conduct this test (11 of the 37 elections in treatment wards and 20 of the 81 elections in control wards were close, that is, were won with a margin of less than 5% of the vote in 2002).

[20] The concern that female candidates might be proxies or tokens for male members of their families is attenuated here because I am concerned with the extent to which women run for office after reservations lapse, when male politicians could run for office themselves. Interestingly, although the media has spent much on decrying prominent proxy candidates (most famously, Ms. Rabri Devi, who was unanimously elevated as chief minister of the state of Bihar when her husband, the erstwhile chief minister, was imprisoned on corruption charges), the one systematic study of the quality of women voted into power (Ban and Rao 2008) finds that "women leaders are drawn from the upper end of the quality distribution of women" (501). Chattopadhyay and Duflo's (2004) finding that villages headed by women enjoy better infrastructure and welfare delivery is consistent with Ban and Rao's (2008) conclusion.

[21] The comparison is difficult because there is no standard transliteration of Indian names from local languages into English; because candidate lists do not consistently place first names first, last names last, and so forth; and because of the large number of comparisons that I needed to conduct. To deal with these issues, I modify and employ a fuzzy matching procedure developed by the Election Commission of India (ECI) to identify duplicate records in the list of eligible voters. I embed the ECI's algorithm in a larger Visual Basic program that creates all possible permutations of the 1997 female candidate names and compares each to the names of the female candidates that ran in 2002. The algorithm makes over 3.3 million comparisons and produces a "match score" for each comparison. The lower the match score, the more "distant" the match. I then manually examined every paired comparison that yielded a match score of 90 (out of 100) or higher, and coded those candidates whose 1997 and 2002 addresses matched as having run in 1997. This yields, for each of the female candidates that ran in 2002, a dummy for whether they had run for office in 1997.

[22] Regressions 3 and 7 employ, as per Zorn's (2005) recommendation, Firth's penalized-likelihood logistic regressions because

TABLE 5. Which Parties Granted Women Tickets in 2002?

	Percentage of Female Candidates			1997 Female Candidate Success Rate
	Reserved in 2002	Open in 1997 Open in 2002	Reserved in 1997, Open in 2002	
Shiv Sena-Bharatiya Janata Party coalition[1]	100.0	3.7	21.6	
Shiv Sena	77.6	2.5	16.2	75.5
Bharatiya Janata Party	22.4	1.2	5.4	32.0
Indian National Congress	96.1	3.7	16.2	15.2
Nationalist Congress Party	90.8	4.9	8.1	0.0

Note: Only women could run for office in reserved constituencies; men and women could run for office in open constituencies. Constituencies were reserved for women through random, stratified, and independent draws in 1997 and 2002. See text for details.
[1]I do not include figures for the Shiv Sena-BJP coalition for the 1997 election because the parties competed against one another in that election.

negative (and statistically significant) coefficients on the number of female candidates and its squared term, respectively, indicate that having more women run for office in a ward increases the odds that a woman will win the election with diminishing returns (the turning point for the average ward occurs at 2.5 female candidates), possibly because increasing the numbers of female candidates tends to split the vote for women. This evidence is consistent with the conjecture that the beneficial effect of quotas occurs through increasing the number of female candidates that run for office. Note, however, that I am not arguing that women no longer face opposition to their candidatures within the household, but rather that reservations relax this constraint somewhat.

Party Hurdles

A third hurdle that women face in their path to power is getting a party ticket. Parties systematically grant women fewer tickets than they grant men. The four major parties in the 1997 and 2002 BMC elections granted women 32% to 42% of the tickets in all wards. Parties, however, granted most of these tickets to women in reserved wards. Women received only 7% of the tickets in unreserved wards.[23] Furthermore, getting a party ticket is critical to women's chances of winning elections. Few independents of either sex win elections—9 and 3 corporators in the BMC were independents in 1997 and 2002, respectively—and all female corporators elected in 1997 and 2002 were elected on party tickets. So, although getting a party ticket is critical for women to win elections, they are systematically granted fewer tickets than are men.

To understand how reservations might alter the propensity of parties to grant women tickets, consider the logic of why parties would grant female candidates tickets. As elsewhere, parties in India generally grant candidates tickets based on their perceived electability. Considerations of ethnicity, caste, money, and "muscle power" play a large role in the process (M.P. Singh 2003). Parties might deny women tickets for two reasons: either because of ideology (in Becker's [1957] terminology, these parties discriminate based on "taste") or because they do not perceive women to be electable ("statistical discrimination"). We may therefore classify parties into two types, based on their reasons for granting or denying women tickets. We expect taste-discriminating parties to deny women tickets both when reservations are in effect and after they have been withdrawn, and statistical-discriminating parties to grant women tickets when reservations are in force, but to only do so once reservations have been withdrawn to the degree that they view women as being electable.

The four main parties in the BMC hardly behaved as taste-discriminating parties because they all took the opportunity to run female candidates in wards that were reserved in 2002 (Table 5, column 1). There is also some weak evidence to suggest that the major parties are statistical discriminators because their willingness to field candidates from treatment wards (column 3) is positively correlated with the degree to which their female candidates won the previous elections with reservations (column 4).[24] Together, these data suggest that parties have not just played along with the new rules of the game since reservations were introduced, but that they have used the reservations policy to learn about the ability of women to win elections, and have subsequently granted or refused women tickets based on their experience with female candidates.

Voter Hurdles

The fourth hurdle that women might face on their path to power is with voters. Voters might discriminate against women or might rationally not vote for them if they think that other voters will not vote for women. I consider each of these two constraints in turn.

employing the regular logistic regression is not possible due to the separation problem. The latter arises because women did not win office in *all* wards where no women ran for office.

[23] Note that if equal numbers of men and women are to be granted party tickets across all wards, women would need to secure 25% of party tickets in unreserved wards, in addition to all the party tickets in reserved wards.

[24] Since the Shiv Sena and Bharatiya Janata Party formed a prepoll alliance in the 2002 elections, the party nomination pattern detailed in the text holds for the alliance rather than for the component parties.

TABLE 6. Impact of Reservations on Voter Mobilization

	The Experiment		
	Open in 1997, Open in 2002	Reserved in 1997, Open in 2002	Difference
1 Turnout in 2002, in percent of registered voters	42.2	41.6	−0.6
2 Change in number of voters registered between 1997 and 2002 elections	819	2,777	1,958**
3 Change in number of male voters registered between 1997 and 2002 elections	632	1,601	969*
4 Change in number of female voters registered between 1997 and 2002 elections	187	1,175	989**
5 Number of wards	81	37	

Note: *significant at 10%, **significant at 5%, ***significant at 1% using one-sided difference in means tests. Only women could run for office in reserved constituencies; men and women could run for office in open constituencies. Constituencies were reserved for women using random, stratified, and independent draws in 1997 and 2002. See text for details.

First, the underrepresentation of women in politics might be as a result of voters' discrimination against women. Reservations might alter the influence of voters who discriminate against women as pro- or antiwomen groups mobilize in response to the reservations policy. The evidence on this mechanism is inconclusive, however. On the one hand, turnout in treatment wards in 2002 was statistically indistinguishable from turnout in control wards (Table 6, row 1), suggesting that reservations in 1997 had no discernible effect on turnout in 2002. On the other hand, the increase in the number of registered voters[25] between elections in treatment wards was triple the increase in voters in control wards (Table 6, rows 2–4). Furthermore, the differential increase in the number of voters in treatment wards was driven by wards that did not elect women (where the average number of voters increased by approximately 3,300) rather than by wards that did elect women (where the average number of voters increased by approximately 1,000). This suggests that voters might have been mobilized in order to vote against women and that this strategy was not tried or failed in treatment wards that did elect women.[26] The evidence remains mixed using the logistic regression test, as seen in regression 4 of Table 4.

Second, the low representation of women in politics might be due to a coordination failure among rational voters who are willing to vote for women, but think that other voters are not willing to do so. More specifically, if voters behave strategically in order to not "waste" their vote by considering candidates that others would not vote for (this is a common assumption in the literature, see Cox 1997 for a prominent application), we could imagine that reservations could move voters from an equilibrium where they consider only male candidates to one where they consider both male and female candidates. Whether voters tip from one equilibrium to the next would depend on whether people think that others will consider female candidates. Assuming that turnout in reserved wards is a measure of voters' willingness to consider female candidates (which may be the case because voters could have chosen to abstain from voting in 1997 if they were not willing to consider female candidates), I expect constituencies within the treatment group and with high turnout in 1997 to be more likely to vote for female candidates in 2002. To test for this channel, I include the interaction between turnout in the 1997 election with the treatment dummy and its constituent terms in the base logistic regression. My prior, which is not borne out by the test (Table 4, regression 5), is that voters will be more likely to vote for women candidates in constituencies where turnout was high in 1997.[27]

Regressions 6 and 7 of Table 4 pool the multivariate tests for the mechanisms by which reservations might influence the chances of women securing office. Note that these regressions do not include a test for whether parties learn to nominate female candidates because I had not tested this mechanism in a regression framework. Regression 6 combines tests for the mechanisms for which we have the strongest evidence: it includes indicators for whether incumbents ran for office, and for the number of female candidates and its squared term. Both mechanisms are associated with an

[25] The ECI maintains an "electoral roll," or list of eligible voters. It is updated once every five years by ECI officers who physically verify the existence and residence of voters, and continuously at the initiative of citizens, who may petition the ECI to have their names added to the electoral rolls subject to verification. Citizens are often prompted by political parties to register themselves to vote.

[26] This explanation is consistent with newspaper accounts that suggest that political parties concentrate their voter registration drives on more conservative and poorer populations, with India's experience of a backlash against caste-based reservations (Weiner 1978; Wilkinson 2000), and with a literature on voting behavior in the United States, which suggests that increase in voter registration by African Americans in the 1960s was accompanied by a similar, if not greater, increase in voter registration on the part of whites (Alt 1994).

[27] In fact, the coefficient for the interaction between turnout and the treatment dummy is negative, rather than positive, and is weakly statistically significant at the 10% level. This voter coordination mechanism, per Cox (1997), should apply to the top two candidates in every election. This means that the binary dependent variable in the logistic regression test for the voter coordination mechanism could be recoded as a 1 if either of the top two candidates in an election is female. Recoding the dependent variable in this manner reconfirms my previous result: I find no evidence that the extent to which voters coordinate on considering female candidates in 2002 is dependent on voter turnout in elections with reservations in 1997.

increased probability of a woman winning an election. Regression 7 adds to this specification indicators for the voter mobilization and coordination mechanisms. In the pooled regression, the only statistically significant predictor for a woman being elected is the dummy for whether a female incumbent ran for office. Overall, this analysis indicates that reservations work in part by introducing into politics women who are able to win elections after reservations are withdrawn.

CONCLUSION

I have exploited a natural experiment to present evidence on the impact of quotas for women on their chances of winning subsequent elections. In an analysis of elections for Mumbai's city legislature, I found that women's chances of securing political office in wards that had been reserved for women in the previous election were approximately five times their chances in wards that had not been reserved for women previously. This is a remarkably large effect.

I detailed several mechanisms by which reservations could boost women's chances of winning elections. Although the data are not conclusive, the evidence suggests that reservations affect subsequent elections in part by introducing into politics women who are able to win elected office even after reservations are withdrawn and by increasing the willingness of parties to grant women tickets. I find evidence against the possibility that reservations allow nondiscriminatory voters to coordinate on considering female candidates for office. The data are inconclusive on whether reservations cause some voters to mobilize against voting for women and on whether the increased number of female candidates boosts the chances of women winning office.

Although my investigation of the channels through which reservations might impact women's chances of winning elections was hindered by the limited size of my data set and by the complexity of the processes that keep women out of power, my exploration of the mechanisms by which reservations work provides ground for future work, and also yields insights into the circumstances under which we might expect the effects of reservations to hold and persist. Whatever the variety of the hurdles that women face in political life, we now know that reservations have managed—in one city—to cut through it all to increase women's chances of winning elections. That they have done so is remarkable, given the deep-seated prejudices against women in Indian society and India's checkered experience with caste-based reservations.

Although the findings of this article invite replication, as do all experimental studies, I expect the effects of reservations uncovered here to hold in a variety of settings. Most obviously, the result that reservations boost women's ability to win elections after they are withdrawn is likely to hold in places with a reservations system similar to that described here. Other local legislatures in India fit this bill, as do the legislatures of countries such as Jordan, Rwanda, and Uganda, which have reservations—rather than voluntary or party list quotas—for women. The fact that the women who win elections in treatment wards are mainly incumbents suggests that the effects of reservations are likely to hold when male incumbents from the election without reservations are weak, when women elected under the reservations policy are of sufficiently high quality (or are able to use their time in office) to be re-elected after reservations lapse, and when neither voters nor political parties display a "taste" for discriminating against women. Unfortunately, it is not clear whether quotas more generally—whether those based on ethnicity, for example—could have the same beneficial effects on subsequent elections. These could have lasting positive effects to the degree that politicians selected by the quota system are of a high enough quality (or are able to use their time in office) to be re-elected once reservations lapse. However, reservations might not work if people have a "taste" for discriminating against people based on their ethnicity or if voters find it easier to mobilize to vote against people of different ethnicities than of different genders.

A separate but related question is how far into the future will the knock-on effects of reservations uncovered here persist. That reservations have their next-elections effects partly by introducing into politics a cohort of women that is able to continue to win office after reservations lapse means that anything that affects the ability of these women to win elections will affect the longevity of the effects of reservations. If female legislators, for example, are recruited for higher office subsequent to elections with reservations, the beneficial impact of reservations on the presence of women in the BMC would be attenuated.

Many questions about the efficacy of quotas and other remedies for inequalities in political representation remain: do the socioeconomic effects of reservations persist after they are withdrawn? Do female politicians inducted by the reservations process at the local level go on to challenge state- and national-level politicians?[28] What types of political exclusion are quotas most effective at remedying? How do the effects of reservations compare to the effects of other types of quotas and to the effects of other means of ameliorating inequalities in political representation, such as majority–minority redistricting? Do these have effects on subsequent elections as well?

Despite the remaining questions, the central finding of this article—that quotas for women improve the chances of women winning elections even after quotas are withdrawn—has broad implications, especially for scholars of democracy. First, although much of the literature on democracy in plural societies either calls for explicit quotas for different groups of people (to form what Lijphart 1977 calls consociational governments) or warns against the use of such quotas because it leads

[28] The data are consistent with this possibility: since the introduction of quotas, the percentage of women in the state legislature, and in Mumbai's contingent to the state legislature, has approximately doubled to 4.2% and 5.9%, respectively. The percentage of women in India's national parliament similarly increased from 7.2% in 1991 to 9.2% in 2004. Whether reservations for women in local governments caused these increases is an interesting, researchable question.

to the permanent "ethnification" of politics (Horowitz 1985), this article reminds us of, and provides strong evidence for, a third possibility: that quotas can themselves set in motion processes that ensure the fairer representation of people even after quotas are removed. Recognizing this possibility should allow people to better design policies that ensure representation of the politically marginalized without permanently "ethnifying" politics. Second, although most political scientists argue that the virtues of democracy—such as fair representation and accountability—emerge over time, through the slow building of new social ties (Lipset 1960), culture (Putnam 1993), and class formations (Moore 1966), my examination of the effects of quotas for women shows that there are ways in which policy makers can achieve fairer representation speedily. It is for these broad implications that the comparative analysis of policies to remedy inequalities in political representation promises to be an exciting field for research.

REFERENCES

Alt, James. 1994. "The Impact of the Voting Rights Act on Black and White Voter Registration in the South." In *Quiet Revolution in the South*, ed. C. Davidson and B. Grofman. Princeton, NJ: Princeton University Press.

Ban, Radu, and Vijayendra Rao. 2008. "Tokenism or Agency? The Impact of Women's Reservations on Village Democracies in South India." *Economic Development and Cultural Change* 56: 501–530.

Bardhan, Pranab, Dilip Mookherjee, and Monica Parra Torrado. 2005. "Impact of Reservations of Panchayat Pradhans on Targeting in West Bengal." BREAD Working Paper.

Barry, Jim, Trudie Honour, and Sneha Palnitkar. 2004. "Social Movement, Action and Change: The Influence of Women's Movements on City Government in Mumbai and London." *Gender, Work and Organization* 11.

Beaman, Lori, Raghabendra Chattopadhyay, Esther Duflo, Rohini Pande, and Petia Topalova. 2008. "Powerful Women: Does Exposure Reduce Prejudice?" Paper.

Becker, Gary S. 1957. *The Economics of Discrimination*. Chicago: The University of Chicago Press.

Cameron, Charles, David Epstein, and Sharyn O'Halloran. 1996. "Do Majority–Minority Districts Maximize Substantive Black Representation in Congress?" *American Political Science Review* 90: 794–812.

Chattopadhyay, Raghabendra, and Esther Duflo. 2003. "The Impact of Reservation in the Panchayati Raj: Evidence from a Nationwide Randomized Experiment." Paper.

Chattopadhyay, Raghabendra, and Esther Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India." *Econometrica* 72: 36.

Chhibber, Pradeep. 1999. *Democracy Without Associations: Transformation of the Party System and Social Cleavages in India*. Ann Arbor: University of Michigan Press.

Chhibber, Pradeep. 2002. "Why Are Some Women Politically Active? The Household, Public Space, and Political Participation in India." *International Journal of Comparative Sociology* 43: 21.

Clingingsmith, David, Asim Ijaz Khwaja, and Michael Kremer. 2009. "Estimating the Impact of the Hajj: Religion and Tolerance in Islam's Global Gathering." *Quarterly Journal of Economics* 124 (3).

Cox, Gary W. 1997. *Making Votes Count: Strategic Coordination in the World's Electoral Systems*. Cambridge, UK: Cambridge University Press.

Fenno, Richard F. 1992. *When Incumbency Fails: The Senate Career of Mark Andrews*. Washington, DC: CQ Press.

Fox, Richard L., and Jennifer L. Lawless. 2004. "Entering the Arena? Gender and the Decision to Run for Office." *American Journal of Political Science* 48: 264–80.

Ghatak, Maitreesh, and Maitreya Ghatak. 2002. "Recent Reforms in the Panchayat System in West Bengal." *Economic and Political Weekly* 37 (1): 45–58.

Hajnal, Zoltan L. 2001. "White Residents, Black Incumbents, and a Declining Racial Divide." *American Political Science Review* 95: 603–617.

Honour, Trudie, Jim Barry, and Sneha Palnitkar. 1999. "The Quota Innovation, Gender and Indian Politics: Experience and Prospects." *Equal Opportunities International* 18.

Horowitz, Donald L. 1985. *Ethnic Groups in Conflict*. Berkeley: University of California Press.

Jha, Shree Nagesh, and P. C. Mathur. 1999. *Decentralization and Local Politics*. Thousand Oaks, CA: Sage.

Krook, Mona Lena. 2006. "Reforming Representation: The Diffusion of Candidate Gender Quotas Worldwide." *Politics and Gender* 2: 303–327.

Lijphart, Arend. 1977. *Democracy in Plural Societies: A Comparative Exploration*. New Haven, CT: Yale University Press.

Linden, Leigh L. 2004. "Are Incumbents Really Advantaged? Exploring the Preference for Non-Incumbents in India. Job Market Paper, Columbia University.

Lipset, Seymour Martin. 1960. *Political Man: The Social Bases of Politics.* Baltimore: The Johns Hopkins University Press.

Lublin, David, and D. Stephen Voss. 2003. "The Missing Middle: Why Median-Voter Theory Can't Save Democrats from Singing the Boll-Weevil Blues." *The Journal of Politics* 65: 227–37.

Mackie, Gerry. 1996. "Ending Footbinding and Infibulation: A Convention Account." *American Sociological Review* 61: 19.

Mansbridge, Jane. 2005. "Quota Problems: Combating the Dangers of Essentialism." *Politics and Gender* 1 (4): 622–38.

McKenzie, David, John Gibson, and Steven Stillman. 2006. "How Important is Selection? Experimental versus Non-Experimental Measures of Income Gains from Migration." World Bank Working Paper 3906, Washington, DC.

Moore, Barrington. 1966. *Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World.* Boston: Beacon Press.

Naik, Yogesh, and Deepak Lokhande. 2001. "Women, OBCs in, 20 Corporators Out in BMC Polls." *Mid-Day* November 15.

Pande, Rohini. 2003. "Can Mandated Political Representation Increase Policy Influence for Disadvantaged Minorities? Theory and Evidence from India." *American Economic Review* 93: 1132–51.

Putnam, Robert D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy.* Princeton, NJ: Princeton University Press.

Sanbonmatsu, Kira. 2006. "Do Parties Know That 'Women Win'? Party Leader Beliefs about Women's Electoral Chances." *Politics and Gender* 2: 431–50.

Sankaran, Kamala, ed. 1992. *Women in Politics: Forms and Processes*. New Delhi: Friedrich Ebert Stiftung.

Sen, Samita. 2000. "Toward a Feminist Politics? The Indian Women's Movement in Historical Perspective." In *Policy Research Report on Gender and Development Working Paper Series No. 9*. World Bank, Washington, D.C.

Shotts, Kenneth. 2003. "Does Racial Redistricting Cause Conservative Policy Outcomes? Policy Preferences of Southern Representatives in the 1980s and 1990s." *The Journal of Politics* 65: 216–26.

Singh, Mahendra Prasad. 2003. *India at the Polls: Parliamentary Elections in the Federal Phase*. Hyderabad: Orient Longman.

Singh, Seema. 2003. *Panchayati Raj and Women Empowerment*. New Delhi: Ocean Books.

Uppal, Yogesh. 2005. "The Disadvantaged Incumbents: Estimating Incumbency Effects in Indian State Legislatures." Paper, Youngstown State University.

Weiner, Myron. 1978. *Sons of the Soil: Migration and Ethnic Conflict in India*. Princeton, NJ: Princeton University Press.

Wilkinson, Steven Ian. 2000. "India, Consociational Theory, and Ethnic Violence." *Asian Survey* 40: 767–91.

Zorn, Christopher. 2005. "A Solution to Separation in Binary Response Models." *Political Analysis* 13: 157–70.