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# Varieties of Clientelism: Machine Politics during Elections

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*Although many studies of clientelism focus exclusively on vote buying, political machines often employ diverse portfolios of strategies. We provide a theoretical framework and formal model to explain how and why machines mix four clientelist strategies during elections: vote buying, turnout buying, abstention buying, and double persuasion. Machines tailor their portfolios to the political preferences and voting costs of the electorate. They also adapt their mix to at least five contextual factors: compulsory voting, ballot secrecy, political salience, machine support, and political polarization. Our analysis yields numerous insights, such as why the introduction of compulsory voting may increase vote buying, and why enhanced ballot secrecy may increase turnout buying and abstention buying. Evidence from various countries is consistent with our predictions and suggests the need for empirical studies to pay closer attention to the ways in which machines combine clientelist strategies.*

**D**uring elections in many countries, clientelist parties (or political machines) distribute benefits to citizens in direct exchange for political support. Such parties compete not only on the basis of policy platforms but also with material inducements given to individuals. These inducements often include food, medicine, and other forms of sustenance. In contexts where citizens are highly dependent on such handouts, including countries where the state fails to provide a social safety net, this pattern of machine politics can have particularly important consequences for democratic accountability and responsiveness.

In the past, prominent scholars viewed clientelism as a preindustrial political phenomenon that would wane as societies modernized. But the evolution of machine politics is often remarkably different than in the United States, where powerful machines such as Tammany Hall in New York and the Dawson machine in Chicago lost considerable influence over time. In many advanced democra-

cies, such as Greece, Italy, and Spain, clientelist parties continue to attract substantial numbers of votes using direct material inducements (Kitschelt and Wilkinson 2007; Piattoni 2001). Clientelism is even more pronounced in many developing countries, where a growing body of evidence reveals the various ways in which parties engage in machine politics. In Brazil, the prevalence of inducements during campaigns motivated over one million citizens to sign a petition in 1999 for stricter legislation, leading to the recent prosecution of nearly 700 politicians (Nichter 2011).

The present study develops a theoretical framework and formal model to parse out varieties of clientelism. These analytical tasks yield three important contributions: (1) revealing why machines are usually most effective when they combine clientelist strategies; (2) unifying in a common framework how machines choose their particular mix of clientelism; and (3) identifying contextual factors that are most propitious for each

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clientelist strategy. More specifically, the article adds rigor to ongoing debates by integrating the analysis of four clientelist strategies: vote buying, turnout buying, abstention buying, and double persuasion. We present a conceptual typology that distinguishes these strategies and then operationalize its two dimensions—as political preferences and voting costs—to analyze formally how and why machines combine strategies.

Our formal model offers important predictions about how machines adapt their clientelist portfolios to contextual factors. These predictions stem from a comparative statics analysis of five characteristics of political environments: compulsory voting, ballot secrecy, political salience, machine support, and political polarization. For example, we argue that the introduction of compulsory voting increases vote buying, whereas enhanced ballot secrecy increases turnout buying and abstention buying. Existing evidence from various countries is consistent with such predictions and highlights the need for empirical studies to collect further data that facilitate rigorous analyses of the ways in which machines combine clientelist strategies.

Understanding how such factors influence the mix of clientelism is important in part because strategies may entail different normative implications. For example, vote buying may be seen as unambiguously harmful for democracy, as the strategy interferes with free and fair elections, and undermines political equality by allowing those who have resources to buy the votes of the poor (Schaffer and Schedler 2007; Stokes 2005). By contrast, Hasen (2000) argues that the normative implications of turnout buying are more ambiguous because it may increase equality of political participation by inducing the poor to vote. Such normative questions challenge scholars to deepen their understanding of how political machines choose among different strategies.

Our findings advance the existing literature on clientelism. Unlike many recent studies that focus exclusively on vote buying (e.g., Hicken 2002; Lehoucq 2007; Stokes 2005), we explain how and why machines are likely to employ diverse portfolios of strategies. Our analysis of how five contextual characteristics affect four clientelist strategies encompasses and significantly extends an important strand of earlier research that narrowly analyzed the effect of electoral institutions on the choice between two clientelist strategies (e.g., Cox and Kousser 1981; Heckelman 1998). For instance, an empirical article by Cox and Kousser (1981) suggests that the introduction of the secret ballot leads machines to rely more heavily on abstention buying than vote buying. The present study also shares some commonalities with insightful work by Estévez, Magaloni, and Diaz-Cayeros (2007), who sug-

gest that machines optimally allocate resources across a portfolio of both clientelist and programmatic benefits. In contrast to their work, our exclusive focus on clientelism enables us to analyze four clientelist strategies (as opposed to just one) and to examine how machines adapt their mix to contextual factors.

Our formal analysis advances existing models of clientelism. Previous models rely on a one-dimensional voter space in which citizens are arrayed along a spectrum of political preferences as in the classic Downsian spatial model of political competition. We introduce a second dimension, such that citizen types are defined both by political preferences and voting costs. This innovation facilitates the integration of nonvoters into our analyses. As a result, the present study addresses a major limitation in almost all existing models of clientelism—they examine only one strategy. For example, Stokes (2005) provides a model of vote buying, and Nichter (2008) develops a model of turnout buying. By contrast, we analyze the trade-offs that parties face when combining four strategies. A model by Morgan and Várdy (2012) also begins to tackle the key issue of how parties combine strategies but focuses narrowly on the impact of introducing the secret ballot. The present article offers a more exhaustive analysis of the range of strategies employed by machines and, through the model's comparative statics, a fuller assessment of factors that influence variation of clientelist strategies.<sup>1</sup>

The findings of this study also contribute to the broader literature on distributive politics. Vigorous scholarly debate continues over how parties distribute targetable goods, such as infrastructure projects and particularistic benefits. Two seminal, formal studies offer conflicting predictions: whereas Cox and McCubbins (1986) contend that parties distribute targetable goods to core supporters, Lindbeck and Weibull (1987) argue they target swing voters. A more recent conceptual paper by Cox (2006) argues that these and other studies focus too narrowly on persuasion (changing voters' preferences); when strategies such as mobilization (affecting whether citizens vote) are considered, the core-supporter hypothesis is strengthened. The present study contributes to this literature by exploring the mechanisms by which clientelist parties *combine* strategies of persuasion and mobilization.

The present study does not claim to provide an exhaustive analysis of all varieties of clientelism. We restrict our analysis to *electoral* clientelism; that is, strategies that exclusively involve the distribution of benefits during electoral campaigns. We acknowledge that clientelism

<sup>1</sup>Dunning and Stokes (2009), an unpublished paper on the topic, examines only two strategies.

often involves a broader set of strategies than just elite payoffs to citizens before elections. For example, studies such as Scott (1969), Levitsky (2003), and Lawson (2009) discuss patterns of *relational* clientelism that involve ongoing relationships of mutual support and dependence.<sup>2</sup> Nevertheless, our explicit focus on electoral clientelism facilitates analysis of numerous strategies that remain poorly understood.

Our analysis investigates an unprecedented range of clientelist strategies and contextual factors and extends to most—though not necessarily all—political environments. Following previous studies (e.g., Nichter 2008; Stokes 2005), we focus on contexts in which political machines do not directly compete to provide clientelist rewards to the *same* citizens. Stokes argues that such “dueling machines” are uncommon because only one party usually has the requisite social networks and resources to deliver rewards in a given community (2005, 324; 2009). Our findings pertain to countries in which several machines may operate, but where each machine controls distinct geographic territories. Our scope also includes countries such as those where Kitschelt argues clientelism is a “unilateral, monopolistic affair concentrated in the hands of a single party” (2011, 9). Based on extensive cross-national survey data, Kitschelt provides numerous examples of such countries, including Japan, Malaysia, Russia, Senegal, South Africa, Thailand, and Turkey. Of course, in some contexts multiple machines may engage in direct competition over identical voters, complicating formal analyses. The discussion section at the end of the article returns to this issue, considering how the “dueling machines” scenario could be modeled.

## Strategies of Electoral Clientelism

Political machines often engage in several distinct strategies of clientelism during campaigns. Figure 1 presents a conceptual typology of five clientelist strategies, which target different types of individuals and induce distinct actions (Nichter 2008, 20). This section discusses each strategy and provides a stylized example about how political machines combine strategies. Later, we operationalize the two dimensions of the typology in order to analyze formally the logic by which machines mix clientelist strategies.

*Vote buying* rewards opposing (or indifferent) voters for switching their vote choices. Studies on vote buying

suggest that machines engage in this strategy in many parts of the world.<sup>3</sup> One recent survey in Nigeria found that 70% of respondents believe vote buying occurs “all of the time” or “most of the time” during elections, with nearly 40% reporting that a close friend or relative was offered benefits to vote for a particular candidate.<sup>4</sup> Empirical research on electoral clientelism typically focuses exclusively on vote buying, even though in reality machines often employ diverse portfolios of strategies. In particular, surveys and interviews frequently investigate “vote buying” by simply asking whether respondents receive particularistic benefits during campaigns but rarely consider whether these rewards actually constitute other strategies such as turnout buying and abstention buying. An unfortunate consequence of this overwhelming focus on vote buying is the limited availability of evidence about other strategies discussed below.

*Turnout buying* rewards unmobilized supporters for showing up at the polls. During the 2004 U.S. election, five Democratic Party operatives in East St. Louis were convicted for offering rewards of cigarettes, beer, medicine, and \$5 to \$10 to increase turnout of the poor (Nichter 2008). One political operative pleaded guilty and testified that they offered individuals rewards “because if you didn’t give them anything, then they wouldn’t come out” (cf. Nichter 2008, 19). In the case of Argentina, Nichter (2008) argues that although both strategies coexist, survey data in Stokes (2005) are more consistent with turnout buying than vote buying. Evidence of turnout buying has also been found in the case of Venezuela (Rosas and Hawkins 2008), as well as Argentina and Mexico (Dunning and Stokes 2009).

*Abstention buying* rewards indifferent or opposing individuals for *not* voting (Cornelius 2004; Cox and Kousser 1981; Schaffer 2002).<sup>5</sup> This demobilizational strategy reduces the number of votes received by opposition candidates. For example, Cox and Kousser (1981) examine newspaper articles from 1870 to 1916 in New York State and show that political operatives paid many rural

<sup>3</sup>To mention just a few examples, recent publications on vote buying focus on countries including Argentina (Stokes 2005), Benin and São Tome (Vicente and Wantchekon 2009), Japan (Nyblade and Reed 2008), Mexico (Diaz-Cayeros, Estévez, and Magaloni, forthcoming), and Thailand (Bowie 2008).

<sup>4</sup>Survey of 2,410 Nigerians in all 36 states and the federal capital territory in February 2007 (see “Nigerians: Vote Buying a Common Occurrence,” International Foundation for Electoral Systems, 2007).

<sup>5</sup>Abstention buying is often termed “negative vote buying” in the literature. However, “negative turnout buying” would be a more precise alternative term because the strategy influences turnout, not vote choices.

<sup>2</sup>Whereas “electoral” clientelism delivers all benefits during electoral campaigns, “relational” clientelism provides ongoing benefits (Nichter 2010).



FIGURE 1 Strategies for Distributing Targetable Goods

		Political Preference of Recipient vis-à-vis Party Offering Goods	
		Indifferent or Favors Opposition	Favors Party
Recipient Inclined to Vote or Not Vote	Inclined Not to Vote	Double Persuasion	Turnout Buying
	Inclined to Vote	Vote Buying Abstention Buying	Rewarding Loyalists

Source: Adapted from Nichter (2008).

voters to stay home on Election Day. Similarly, politicians use rewards to demobilize opposition voters when bus- ing them away from electoral districts in the Philippines and buying their identification cards in Guyana (Schaffer 2002).

*Double persuasion* provides benefits to citizens in or- der to induce their electoral participation *and* influence their vote choices. The broader literature on clientelism suggests that many individuals have little in the way of ideological preferences or reasons to vote, other than ma- terial rewards offered by clientelist parties (e.g., Chubb 1982, 171). With double persuasion, machines distribute benefits to such nonvoters who do not inherently prefer the machine on ideological or programmatic grounds. Although studies typically ignore double persuasion, we find that machines are typically most effective when they devote some resources to this strategy.

*Rewarding loyalists* provides particularistic benefits to supporters who would vote for the machine anyway. By definition, such rewards do not influence vote choices or induce turnout during a contemporaneous election. Scholars typically understand such benefits as part of on- going, long-term relationships between politicians and citizens (e.g., Auyero 2000; Kitschelt and Wilkinson 2007). In one explanation of rewarding loyalists, Diaz-Cayeros, Estévez, and Magaloni (forthcoming, Chap. 4) argue that parties offer selective benefits to core supporters during elections in order to “prevent the erosion of partisan loyalties” over time. Given that we focus on short-term electoral clientelism, such ongoing relation- ships are outside of the scope of our analysis, and we do not incorporate rewarding loyalists in the present article.

Combining Strategies

When distributing benefits during campaigns, political machines frequently combine several of the strategies in Figure 1. To provide intuition and motivate formal anal- ysis of how political machines combine strategies, we first present a stylized example.

Assume that a political machine has \$100 to distribute to citizens during a campaign. The machine seeks to max- imize its electoral prospects by influencing vote choices and/or turnout. There are 12 citizens whom the machine can target using different strategies:

- Vote Buying:** Veronica (\$10), Victor (\$40), Virginia (\$50)
- Turnout Buying:** Tomas (\$10), Teresa (\$20), Tonia (\$35)
- Abstention Buying:** Alejandro (\$10), Ana (\$30), Alberto (\$35)
- Double Persuasion:** Debora (\$10), David (\$25), Diego (\$40)

Observe that different payments (in parentheses) are re- quired to buy each citizen using the given strategy. Re- quired payments vary because citizens differ with respect to two key attributes—political preferences and voting costs. For example, vote buying is costlier when a citizen strongly opposes the machine on ideological grounds. Likewise, turnout buying is costlier when a citizen faces high voting costs such as transportation or lost wages.

Given the different required payments, how does the machine allocate its budget? The first crucial considera- tion is that vote buying benefits the machine more than other strategies. Vote buying provides two net votes—it adds a vote to the machine’s tally and subtracts one from

the opposition. By contrast, turnout buying and double persuasion provide only one net vote because they target nonvoters. Abstention buying also provides just one net vote by subtracting one from the opposition. To allocate its budget efficiently, the machine should target citizens who offer the most net votes per dollar spent.

Using this metric, the machine should start by vote buying Veronica. For \$10, it earns two net votes (i.e., \$5 per net vote). To vote buy an additional citizen, the machine would need to pay Victor \$40 (\$20 per net vote). Thus, the machine would be better off turnout buying Tomas, abstention buying Alejandro, and double persuading Debora, as each provides one net vote for \$10. The machine now has \$60 remaining and considers costlier citizens. It should vote buy Victor for \$40 and turnout buy Teresa for \$20. Both options are equally cost-effective (\$20 per net vote) and preferable to using the other strategies to target David (\$25 per net vote) or Ana (\$30 per net vote).

This stylized example provides several insights for further investigation: (1) machines often find it advantageous to combine clientelist strategies; (2) their mix depends on citizens' political preferences and voting costs; and (3) machines are willing to pay more for vote buying relative to other strategies. Observe that the machine's decision process is actually more complicated, because all opposition voters (e.g., Veronica and Alejandro) are potential targets for *both* vote buying and abstention buying. We now develop a model that builds on intuition from this stylized example and suggests how machines tailor their mix of clientelist strategies to specific political environments.

## Model

**Setup.** Consider two political parties, an incumbent machine party ( $M$ ) and an opposition party ( $O$ ), and a continuum of citizens with unit mass. Each party offers a platform,  $x^M$  and  $x^O$ , respectively, on a one-dimensional ideological spectrum ranging from  $\underline{X}$  to  $\bar{X}$ . Without loss of generality, let  $x^O < x^M$ , and for simplicity, assume that the parties' platforms are symmetric around zero (that is,  $x^O = -x^M$ ).<sup>6</sup>

Both parties' platforms are fixed for the duration of our analysis. This simplifying assumption is consistent with our focus on electoral clientelism and accurately reflects reality during many electoral campaigns: parties may have attributes that cannot be credibly transformed

in the short run, such as the personal or ideological characteristics of their leaders.<sup>7</sup>

We operationalize the dimensions of the typology presented above by examining political preferences and voting costs. Each citizen  $i$  is defined by her political preferences  $x_i$  and net voting costs  $c_i$ , where  $x_i$  and  $c_i$  are independent.<sup>8</sup> The citizens' ideal points  $x_i$  are distributed over  $[\underline{X}, \bar{X}]$  according to  $F(x)$ , where  $F$  has a strictly positive and continuously differentiable density  $f$  over  $(\underline{X}, \bar{X})$ . Net voting costs  $c_i$  are distributed over  $[\underline{C}, \bar{C}]$  according to  $G(c)$ , where  $G$  has a strictly positive and continuously differentiable density  $g$  over  $(\underline{C}, \bar{C})$ . For ease of explication, we focus on the case where the parties' platforms are the endpoints of the citizens' ideological spectrum (i.e.,  $\underline{X} = x^O$  and  $\bar{X} = x^M$ ), but results are not affected if some citizens have more extreme political preferences (i.e.,  $\underline{X} < x^O$  and  $\bar{X} > x^M$ ).<sup>9</sup>

We follow the broad range of studies that employ expressive utility as a way of overcoming the supposed "paradox" of voter turnout.<sup>10</sup> Our model assumes that a citizen's utility equals the difference between her expressive value from voting and her net voting costs. Formally, a citizen of type  $(x_i, c_i)$  who votes for party  $P \in \{M, O\}$  receives utility:<sup>11</sup>

$$U^P(x_i, c_i) = -|x^P - x_i| - c_i \quad (1)$$

The first term,  $-|x^P - x_i|$ , captures the notion that the closer the citizen's ideal point to the platform of the party for which she votes, the more utility she receives from casting a ballot. The second term,  $c_i$ , represents the citizen's net voting cost. This cost includes material costs of

<sup>7</sup>Holding platforms constant is consistent with numerous influential models of redistributive politics and clientelism (e.g., Dixit and Londregan 1996; Lindbeck and Weibull 1987; Nichter 2008; Stokes 2005; also see Persson and Tabellini 2000, 53).

<sup>8</sup>This assumption suggests that net voting costs (voting costs minus abstention costs) are not inherently less for machine supporters (or opposers). As we explore below, this assumption does not imply that strong and weak partisans are equally willing to *incur* voting costs.

<sup>9</sup>A proof is available upon request.

<sup>10</sup>The "paradox" is why citizens vote, given almost no chance of being pivotal. Feddersen, Gailmard, and Sandroni (2009) provide an extended discussion of the role of expressive utility in models of voter turnout. Morgan and Vardy (2012) offer an excellent formal defense of exclusively using expressive utility in models of clientelism.

<sup>11</sup>While this utility function facilitates exposition and graphic illustration, all propositions below hold for a broad class of utility functions, including a quadratic loss function. Results are robust to any utility function that is continuous and of the form  $U(x_i, c_i) = L(x^P; x_i) - h(c_i)$ , where  $L(x^P; x_i)$  is a concave loss function parameterized by the parties' platforms  $P \in \{M, O\}$ , and  $h(c_i)$  is monotonically increasing in  $c_i$ .

<sup>6</sup>This assumption simplifies the analysis but qualitatively does not affect our results.

reaching the polls (such as transportation, lost wages, or child care) less any costs incurred from abstention. Such abstention costs range from social disapprobation to fines and penalties in countries with compulsory voting laws.<sup>12</sup> If a citizen abstains, she is assumed to receive a reservation utility of 0.<sup>13</sup>

We assume that a machine has a given budget  $B$  to allocate across citizens using different strategies of electoral clientelism.<sup>14</sup> In order to allocate this budget most effectively, the machine's objective is to maximize the net votes received from payments to citizens (i.e., additional votes for the machine plus votes taken away from the opposition). We assume the machine cannot afford to buy all citizens, given its limited resources ( $B$ ).<sup>15</sup> As discussed in the introduction to this article, we follow models of clientelism such as Stokes (2005) and Nichter (2008) by focusing on the many contexts in which either (a) one party engages in clientelism or (b) multiple machines operate but each controls distinct communities. Our decision-theoretic model thereby assumes that political machines do not directly compete to provide rewards to the *same* citizens. Later we discuss how a game-theoretic model could investigate what Stokes describes as the empirically "unusual" case of "dueling machines" (2005, 324).<sup>16</sup>

<sup>12</sup>We make two realistic assumptions that ensure an interior solution to the machine's optimization problem and monotonicity of comparative statics: (1) some indifferent citizens vote (formally, this requires  $\bar{C} < -x^M$ ); and (2) even with electoral clientelism, there exist strong supporters who do not vote (formally, this requires  $\bar{C} > b^*$ , where  $b^*$  is defined below as the most expensive payment to nonvoters).

<sup>13</sup>Note that disutility of abstaining, which may vary across individuals, is already captured by the use of *net* voting costs ( $c_i$ ). An equivalent way of representing this setup is to unpack net voting costs such that  $c_i = k_i - a_i$ , where  $k_i \geq 0$  represents an individual's voting costs, and  $a_i \geq 0$  represents an individual's abstention costs. The citizen turns out if  $-|x^P - x_i| - k_i \geq -a_i$ , or equivalently, if  $-|x^P - x_i| - c_i \geq 0$ . Thus, with the use of net voting costs, the reservation utility is 0.

<sup>14</sup>The present article examines how a machine optimally allocates a given budget  $B$  across strategies of electoral clientelism. Analyzing how a machine chooses  $B$ —i.e., how it allocates funds between electoral clientelism and other campaign activities (e.g., advertising or fraud)—is beyond the scope of our analysis.

<sup>15</sup>Formally, the machine's problem is to maximize its net votes by assigning a reward  $b_i \geq 0$  to every citizen, such that total expenditures,  $\int \int b_i g(c) f(x) dc dx$ , are less than or equal to budget  $B$ . All results are identical if we instead set up the model as an expenditure minimization problem, in which the machine minimizes expenditures while buying a given number of citizens needed for victory.

<sup>16</sup>Stokes (2009, 12, 20) provides two reasons why researchers commonly assume a single machine: (1) the incumbent party has exclusive access to public coffers used for clientelist payments; and (2) only one party has invested in the "dense organizational structure" and "social proximity" that define a machine. As mentioned

We assume that a machine can observe citizens' political preferences and voting costs through its extensive social networks. We also initially assume that the machine is able to enforce clientelist exchanges but later relax this assumption to examine how ballot secrecy affects the mix of strategies due to the threat of opportunistic defection by citizens.

## Classifying Citizens

Given its knowledge of preferences and voting costs, the machine can classify citizens. If a citizen shows up at the polls, she will vote for the machine if doing so provides (weakly) greater utility than voting for the opposition. That is, a citizen votes for the machine if  $U_i^M \geq U_i^O$ , or equivalently, if  $x_i \geq 0$ .<sup>17</sup> Thus, citizens with political preferences  $x_i \geq 0$  are supporters of the machine, while those with political preferences  $x_i < 0$  are opposers. But a citizen will only vote for her preferred party if doing so provides (weakly) greater utility than abstaining, which yields a reservation utility of 0. That is, she votes if  $\max[U_i^M, U_i^O] \geq 0$ , or equivalently, if  $\max[-|x^M - x_i| - c_i, -|x^O - x_i| - c_i] \geq 0$ . Overall, the machine can classify the population into four groups of citizens:

**Supporting Voters:** Citizens with  $x_i \geq 0$  and  $-|x^M - x_i| - c_i \geq 0$

**Supporting Nonvoters:** Citizens with  $x_i \geq 0$  and  $-|x^M - x_i| - c_i < 0$

**Opposing Voters:** Citizens with  $x_i < 0$  and  $-|x^O - x_i| - c_i \geq 0$

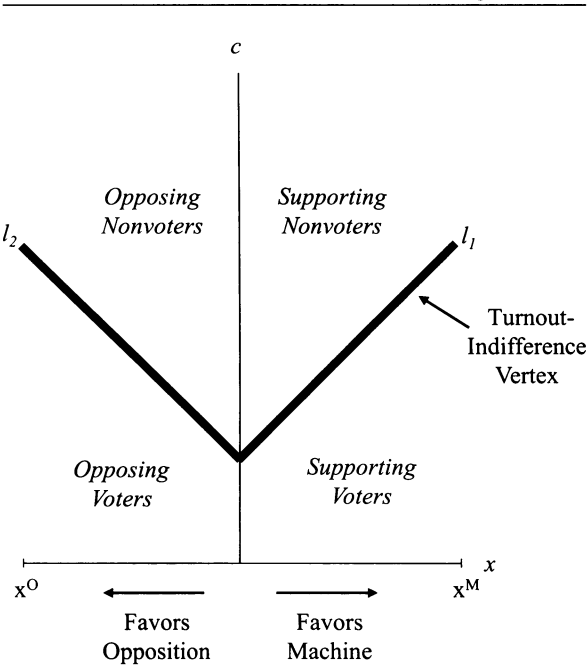
**Opposing Nonvoters:** Citizens with  $x_i < 0$  and  $-|x^O - x_i| - c_i < 0$

Figure 2 presents a graphical depiction of these four groups of citizens (from the perspective of the machine). Political preferences are represented on the horizontal axis, while net voting costs are represented on the vertical axis. The "turnout indifference vertex" represents citizens who are indifferent between voting and not voting, because they receive the same utility from voting as they

previously, Kitschelt's (2011) extensive survey identifies numerous countries with only one machine. Furthermore, even in countries where multiple machines operate, often in a given town only one party has the infrastructure, social networks, and resources required to deliver rewards and monitor behavior.

<sup>17</sup>To ensure that the party's optimization problem is well defined, we assume that citizens who are indifferent between the two parties vote for the machine and that citizens who are indifferent between abstaining and voting come to the polls.

FIGURE 2 Map of Citizens by Political Preferences and Net Voting Costs



Note: Figure 2 is a map of citizens. Machine supporters are on the right; citizens with greater voting costs are higher. Citizens on the bolded vertex are indifferent between voting and not voting. The shape is a vertex as citizens with intense political preferences are willing to incur greater voting costs. Citizens above the vertex do not vote. Citizens on or below  $l_1$  vote for the machine. Citizens on or below  $l_2$  vote for the opposition.

do from abstaining.<sup>18</sup> More specifically, all citizens on or below the right section of the vertex ( $l_1$ ) vote for the machine; those on or below the left section ( $l_2$ ) vote for the opposition. All citizens above the vertex are nonvoters.

The shape of the turnout indifference vertex reflects the fact that citizens with intense political preferences (i.e., voters for whom  $x_i$  approaches either  $x^M$  or  $x^O$ ) receive greater expressive utility from voting, as can be observed in the utility function (equation 1). They are thus more inclined to incur voting costs and turn out to support their favored party. By contrast, citizens who have weak political preferences (i.e., citizens for whom  $x_i$  approaches 0) receive lower expressive utility from voting and thus are less inclined to incur voting costs and show up at the polls.<sup>19</sup>

<sup>18</sup>Formally, these are supporters for whom  $-|x^M - x_i| - c_i = 0$  and opponents for whom  $-|x^O - x_i| - c_i = 0$ . It thus follows that  $l_1 = x - x^M$  and  $l_2 = -x + x^O = -x - x^M$ , where the second equation follows from the assumption of symmetric party platforms,  $x^M = -x^O$ .

<sup>19</sup>The horizontal axis in Figure 2 represents  $C$ . Since  $c_i$  represents net voting costs,  $C$  can be less than 0 (i.e., abstention costs greater than voting costs). Given our assumption that some indifferent citizens vote, the vertex tip is above the horizontal axis.

Payments

In order to determine the machine’s optimal mix of clientelist strategies, we first identify how much the machine would need to pay to buy each citizen type. Intuitively, the reward it would need to pay varies, because citizens incur different ideological and voting costs when exchanging electoral support for clientelist rewards. For each strategy, the required payments ( $\bar{b}_i$ ) are as follows:

*Vote Buying* targets opposing voters, who have a reservation utility of  $U_i^O$ . To induce an opposing voter of type  $t_i = (x_i, c_i)$  to switch her vote, the machine must therefore pay  $\bar{b}_i^{VB}$  such that  $U_i^M + \bar{b}_i^{VB} \geq U_i^O$ . In an optimal allocation, the machine sets payments equal to a citizen’s reservation price, because it will not “overpay” (pay a citizen more than her reservation price) or “underpay” (pay a citizen less than her reservation price).<sup>20</sup> Thus, the inequality binds. Substituting the identities of  $U_i^M$  and  $U_i^O$  from equation (1) yields:  $-|x^M - x_i| - c_i + \bar{b}_i^{VB} = -|x^O - x_i| - c_i$ . Then, solving for  $\bar{b}_i^{VB}$ :<sup>21</sup>

$$\bar{b}_i^{VB} = -2x_i \tag{2}$$

As shown in equation (2), the machine can vote buy all opposing voters with a given ideal point for the same price, even if they have different costs of voting. Because they already show up at the polls, opposing voters only need to be compensated for voting against their political preferences.

*Turnout Buying* targets supporting nonvoters, who have a reservation utility of 0. To induce turnout of a supporting nonvoter of type  $t_i = (x_i, c_i)$ , the machine must pay  $\bar{b}_i^{TB}$  such that  $U_i^M + \bar{b}_i^{TB} \geq 0$ . Substituting the identity of  $U_i^M$  from equation (1) yields:  $-|x^M - x_i| - c_i + \bar{b}_i^{TB} \geq 0$ . Then, given that the inequality binds and solving for  $\bar{b}_i^{TB}$ :

$$\bar{b}_i^{TB} = c_i - x_i + x^M \tag{3}$$

Supporting nonvoters receive more utility from abstaining than from voting. Thus, with turnout buying, the machine must compensate such citizens for the difference between the utility received from staying home and the utility received from voting for the machine.

*Abstention Buying* targets opposing voters, who have a reservation utility of  $U^O$ . In order to convince an opposing voter of type  $t_i = (x_i, c_i)$  to stay home, the machine must offer a reward  $\bar{b}_i^{AB}$  such that  $\bar{b}_i^{AB} \geq U_i^O$ . Substituting  $U_i^O$  from equation (1) yields:  $\bar{b}_i^{AB} \geq -|x^O - x_i| - c_i$ .

<sup>20</sup>A proof is available upon request.

<sup>21</sup>For the derivation of equations in this section, recall the assumption of symmetric party platforms,  $x^M = -x^O$ .



Then, given that the inequality binds and solving for  $\bar{b}_i^{AB}$ :

$$\bar{b}_i^{AB} = -x_i - x^M - c_i \quad (4)$$

With abstention buying, the machine must compensate opposing voters for (1) the forgone utility of voting for their preferred party and (2) the cost they incur by abstaining.

*Double Persuasion* targets opposing nonvoters, who neither participate in elections nor support the machine. Their reservation utility is 0. To induce an opposing nonvoter of type  $t_i = (x_i, c_i)$  to turn out *and* vote for the machine, the party must therefore pay  $\bar{b}_i^{DP}$  such that  $U_i^M + \bar{b}_i^{DP} \geq 0$ . Substituting the identity of  $U_i^M$  from equation (1) yields:  $-|x^M - x_i| - c_i + \bar{b}_i^{DP} \geq 0$ . Then, given that the inequality binds and solving for  $\bar{b}_i^{DP}$ :

$$\bar{b}_i^{DP} = c_i - x_i + x^M \quad (5)$$

Observe that equations (3) and (5) are identical, except that double persuasion targets opposing nonvoters ( $x_i < 0$ ), while turnout buying targets supporting nonvoters ( $x_i \geq 0$ ). With double persuasion, the machine must compensate opposing nonvoters for (1) voting against their political preferences and (2) their disutility from voting relative to abstaining.

## Optimal Mix of Clientelist Strategies

Given this information about required payments, we determine the optimal mix of clientelist strategies. This section provides intuition about how a machine optimally allocates resources across vote buying, turnout buying, abstention buying, and double persuasion in order to maximize its electoral prospects. The online appendix provides proofs of each proposition.

The machine adapts its clientelist payments to the reservation prices of citizens (based on their ideological preferences and voting costs, in accordance with equations 2–5) and targets those who deliver net votes most cheaply. Otherwise, the machine would be better off shifting resources to obtain additional electoral support. The machine is willing to pay twice as much to the most expensive vote buying recipient (a payment of  $b_{VB}^*$ ) as it is willing to pay to the most expensive turnout buying, abstention buying, and double persuasion recipients (payments of  $b_{TB}^*$ ,  $b_{AB}^*$ , and  $b_{DP}^*$ , respectively). After all, vote buying delivers twice as many net votes as each of the other three strategies. By the same logic, the machine is willing to pay the most expensive turnout buying recipient exactly as much as it pays the most expensive abstention buying or double persuasion recipient, because they both

yield one net vote. In sum, as shown formally in the online appendix:

**Proposition 1.** *The machine optimally sets  $b_{VB}^* = 2b_{TB}^* = 2b_{AB}^* = 2b_{DP}^*$ .*

Note that although these are the *most expensive* payments for each strategy, not all recipients will obtain such large handouts, as explored below. The machine pays citizens according to reservation prices, which depend on each individual's ideological preferences and voting costs.<sup>22</sup> For notational simplicity, analysis below drops subscripts, letting  $b_{VB}^* = b^{**}$  and  $b_{TB}^* = b_{AB}^* = b_{DP}^* = b^*$ . An important finding follows. Observe in Proposition 1 that if  $b_{VB}^*$ ,  $b_{TB}^*$ ,  $b_{AB}^*$ , or  $b_{DP}^*$  is greater than 0, then all four terms must be greater than 0. Thus:

**Proposition 2.** *If a machine engages in electoral clientelism, then it optimally engages in all four strategies of vote buying, turnout buying, abstention buying, and double persuasion.*

Whereas most studies focus exclusively on vote buying, Proposition 2 suggests that machines never optimally expend all their resources on just one strategy. Mobilization and demobilization are also fundamental to the logic of electoral clientelism.

Another important implication pertains to double persuasion. This strategy might not seem intuitive—why distribute benefits to citizens who neither vote nor support the machine? Indeed, Dunning and Stokes (2009) even call double persuasion a “perverse strategy.” Yet our model suggests that machines optimally engage in double persuasion. When operatives distribute rewards, they find that targeting weakly opposing nonvoters through double persuasion is often more cost-effective than buying votes of strongly opposed voters or buying turnout of supporting nonvoters with high voting costs.

## Who Gets Bought?

Given that the machine optimally combines all four strategies, how does it determine *which* citizens to buy? Our findings provide insight into this key question. This section discusses graphical intuition, and the online appendix provides formal proofs.

Our discussion focuses on the map of citizens in Figure 3, which adds four shaded regions to Figure 2. The letters in these shaded regions represent citizens targeted with each strategy. For example, citizens labeled “T,” like Tomas in our earlier stylized example, receive turnout buying payments. By contrast, citizens labeled “V” receive vote buying payments, citizens labeled “A”

<sup>22</sup>More specifically, payments are given by the payment equations (2–5) for each respective strategy.



cost-effective. If the machine rewards an opposing voter located above  $l_6$ , abstention buying is more cost-effective.

Given this condition, we can also determine who receives the most expensive abstention buying payment ( $b^*$ ). The machine delivers  $b^*$  to opposing voters who require exactly that level of benefits to stay home. Such opposing voters are located on the *abstention buying line* ( $l_7$ ), which extends from  $X^O$  to the point where  $l_7$  intercepts with  $l_6$ .<sup>28</sup>

The discussion thus far provides intuition about whom the machine buys with its most expensive payments ( $b^*$  and  $b^{**}$ ): citizens on the turnout buying line receive payments of  $b^*$ , citizens on the double persuasion line receive payments of  $b^*$ , citizens on the vote buying line receive payments of  $b^{**}$ , and citizens on the abstention buying line receive payments of  $b^*$ . Another key insight is that the machine optimally buys *all* citizens whose required payments are less than or equal to the most expensive payments for each respective strategy. That is, the machine *buys all citizens in the shaded areas* in Figure 3. For further intuition, assume a voter X weakly opposes the machine and requires a vote buying payment  $b'$ , which is smaller than  $b^{**}$ . If the machine vote buys an opposing voter Y for  $b^{**}$ , then it must also vote buy X because she provides the same number of net votes for a smaller payment. Otherwise, the machine would be better off buying X instead of Y and reallocating the savings. Note the machine optimally pays X exactly her required payment, as it does not “overpay” in equilibrium. Such logic also applies for turnout buying, abstention buying, and double persuasion.

The model also offers insight about whom the machine does *not* buy. Formal analysis suggests the machine optimally distributes *no* benefits to opposing voters who require payments greater than  $b^{**}$  or to nonvoters who require payments greater than  $b^*$ . Graphically, the machine buys no citizens outside the shaded areas in Figure 3. For further intuition, assume that a voter Z strongly opposes the machine and requires a vote buying payment  $b''$ , which is greater than  $b^{**}$ . Observe that even the most expensive vote buying payment  $b^{**}$  “underpays” Z and is not enough to persuade her to switch her vote. It cannot be optimal for the machine to expend resources on citizens requiring vote buying payments larger than  $b^{**}$ , for such payments would not alter their behavior and would constitute wasted expenditures. The logic is analogous for turnout buying, abstention buying, and double persuasion.

<sup>28</sup>In accordance with equation (4), these are opposing voters of type  $t_h = (x_h, c_h)$  for whom  $b^* = -x_h - x^M - c_h$ . It follows that  $l_7$  is given by the equation  $c = -x - x^M - b^*$ , on the domain from  $X^O$  to the point where  $l_7$  intercepts with  $l_6$ .

Taken together, these findings suggest the optimal mix of clientelist strategies:

**Proposition 3. Optimal Mix of Strategies**

**Vote buying:** If  $\bar{b}_i^{VB} \leq b^{**}$  and  $c_i \leq x^O$ , pay an opposing voter  $\bar{b}_i^{VB}$

**Turnout buying:** If  $\bar{b}_i^{TB} \leq b^*$ , pay a supporting nonvoter  $\bar{b}_i^{TB}$

**Abstention Buying:** If  $\bar{b}_i^{AB} \leq b^*$  and  $c_i > x^O$ , pay an opposing voter  $\bar{b}_i^{AB}$

**Double persuasion:** If  $\bar{b}_i^{DP} \leq b^*$ , pay an opposing non-voter  $\bar{b}_i^{DP}$

**No Payment:** Make no payment to all other citizens

The online appendix provides a formal derivation of these equilibrium conditions and shows how the machine determines  $b^*$  and  $b^{**}$ . In order to explore why this optimal mix differs across electoral contexts, we now examine comparative statics.

**Comparative Statics**

The model offers insights into how the political environment in which a machine operates shapes its portfolio of clientelism. Machines optimally tailor their mix of clientelist strategies to at least five characteristics of political environments: (1) compulsory voting, (2) strength of ballot secrecy, (3) salience of political preferences, (4) political polarization, and (5) level of machine support. This section provides intuition about how each factor influences the optimal mix, based on analytical solutions derived in the online appendix.

More specifically, formal analysis indicates how a machine optimally changes the quantity of citizens bought with each strategy in response to parameter shifts in the model. In response to such changes, machines alter which citizens they buy by reallocating resources *across* and *within* strategies of electoral clientelism. Changes in the political environment affect the number of cheap targets—such as Veronica and Tomas in the stylized example discussed above—whom the machine can buy with each strategy. Thus, machines reallocate resources toward strategies that now offer additional cheap targets. Machines also reallocate resources within a given strategy to ensure that they continue to buy the cheapest citizens. For tractability, comparative statics examine the case where  $x_i$  and  $c_i$  are distributed uniformly.



Where possible, we examine empirical evidence related to the predictions of each comparative static. As discussed above, the paucity of data on distinct strategies of electoral clientelism (especially across time or space) impedes rigorous testing of comparative statics. Nevertheless, our formal findings yield important insights and lay the groundwork for future empirical research.

**Compulsory Voting.** Few institutional changes affect voting behavior as dramatically as the introduction of compulsory voting. Over 30 countries have introduced compulsory voting for a variety of reasons (IDEA 2009). While scholars such as Lijphart (1997) suggest that compulsory voting may reduce political inequality by encouraging electoral participation, our analysis predicts that introducing this rule has unintended consequences with respect to clientelism. Several analysts purport that compulsory voting reduces vote buying because it increases how many purchased voters are needed to influence an election (e.g., Donaldson 1915; Dressel 2005; Uwanno and Burns 1998). For example, Schaffer argues that compulsory voting “provides an institutional disincentive for vote buying: by expanding the electorate it makes vote buying more expensive” (2008, 124). But contrary to what such analysts might predict, countries with compulsory voting often have relatively *higher* rates of vote buying. While the prevalence of vote buying depends on various factors (some explored below), it deserves mention that a recent survey of over 37,000 citizens across the Americas reveals that vote buying is twice as prevalent in countries where voting is mandatory.<sup>29</sup>

Our model examines specific mechanisms by which compulsory voting affects clientelist strategies and predicts that—holding other factors equal—the introduction of compulsory voting actually *increases* the prevalence of vote buying. To analyze the effects of compulsory voting, we unpack citizens’ net voting costs such that  $c_i = n_i - a$ , where  $a \geq 0$  represents the fines or other penalties formally imposed on nonvoters through a compulsory voting law.<sup>30</sup> Higher abstention costs boost turnout and shift the vertex upwards. This upward shift increases the number of cheap vote buying targets (such as Veronica in the stylized example), who are weak opposing voters clustered along the vertical axis under the vertex. In order

to buy these newly introduced cheap targets for vote buying, the machine (1) reallocates resources from turnout buying, double persuasion, and abstention buying toward vote buying and (2) reallocates resources within vote buying from the most expensive recipients toward the newly introduced cheap targets. Consequently, the prevalence of vote buying increases ( $\frac{\partial VB}{\partial a} > 0$ ), whereas turnout buying, abstention buying, and double persuasion all decrease ( $\frac{\partial TB}{\partial a} < 0$ ,  $\frac{\partial AB}{\partial a} < 0$ ,  $\frac{\partial DP}{\partial a} < 0$ ). As shown graphically (compare Figures 3 and 4a), more citizens receive vote buying payments (“Vs”), whereas fewer citizens receive payments for turnout buying (“Ts”), abstention buying (“As”), and double persuasion (“Ds”).

The findings of a recent field experiment in Peru are consistent with our model’s prediction about the impact of compulsory voting on vote buying. Leon (2011) examines the impact of a steep reduction in the penalties imposed on nonvoters. In 2006, the Peruvian government decreased compulsory voting penalties from approximately \$50 to as low as \$6 in the poorest districts. Given that this institutional shift remained almost entirely unpublicized, Leon (2011) conducted an experiment by randomly providing information about the penalty reductions. Observe that our model predicts that this decrease in abstention costs ( $a$ ) will reduce turnout, and as a consequence, lead to a decline in vote buying. These predictions match the findings in Leon (2011): Peru’s reduction in penalties for abstention caused significant declines in both electoral participation and vote buying. Most important for this discussion, the study finds that “a decrease in the cost of abstention reduces the incidence of vote buying by 20%” (Leon 2011, 4).

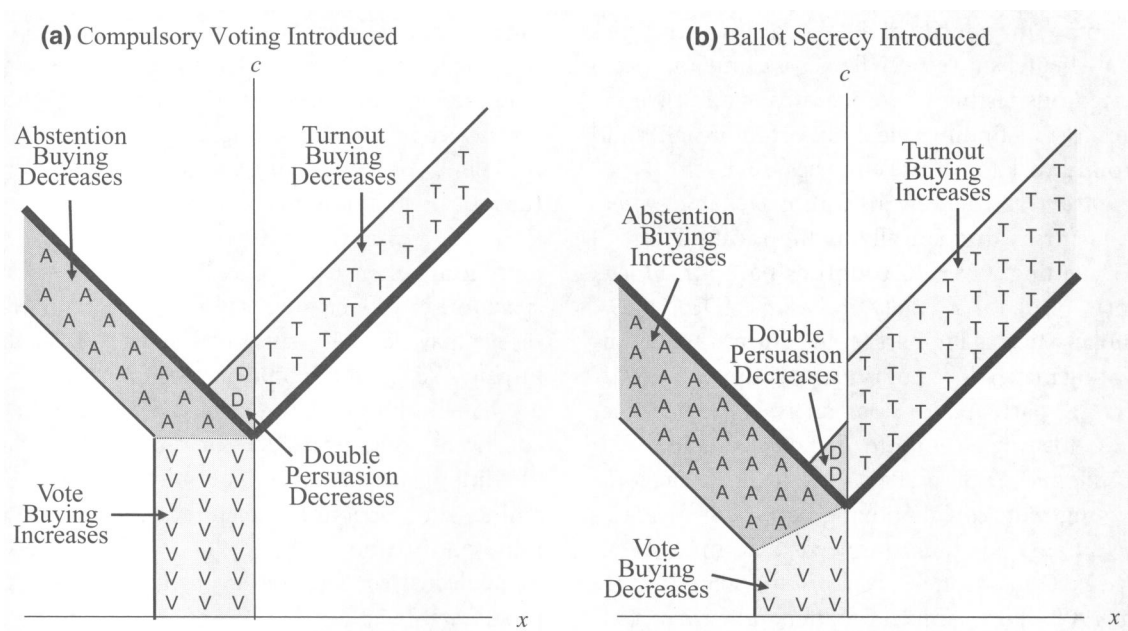
Although the Peruvian study examines only vote buying, other studies also provide evidence about the impact of compulsory voting on different strategies of electoral clientelism. Evidence from both Australia and Belgium is consistent with the predictions of our model. In an analysis of the overall decline of clientelism in Australia, Orr suggests that compulsory voting decreased turnout buying: “As a final nail in the coffin, compulsory enrolment and voting in Australia assisted, by guaranteeing high turnouts and thereby out-flanking bribery to ‘get-out-the-vote’” (2003, 133). Furthermore, Malkopoulou suggests Belgium introduced compulsory voting in 1893 in part to reduce abstention buying, and concludes that compulsory voting laws “may still be a useful mechanism to prevent electoral corruption and abstention buying in countries that feature large economic divides and labour dependence” (2009, 10). Overall, in line with these authors’ findings, the model’s comparative statics predict how compulsory voting affects each strategy of electoral clientelism.

<sup>29</sup>Survey conducted by the Latin American Public Opinion Project of Vanderbilt University. In the 13 countries with compulsory voting, 10.9% of citizens reported receiving offers of material benefits in exchange for their votes “sometimes” or “often,” versus only 5.3% in the 11 countries with optional voting. Removing Canada and the United States from the sample increases the prevalence of vote buying in countries with optional voting to 6.1% (N=9).

<sup>30</sup>Note that  $n_i$  captures all other net costs of voting (i.e., voting costs and other abstention costs such as social disapprobation).



FIGURE 4 Comparative Statics



Note: (a) *Compulsory voting* increases abstention costs. Fewer citizens are nonvoters, so the vertex shifts up. The machine reallocates its budget toward cheap vote buying targets (“Vs”) near the vertical axis.  
(b) *Ballot secrecy* increases the cost of monitoring vote choices. The machine reallocates its budget toward turnout buying (“Ts”) and abstention buying (“As”), strategies that only require monitoring turnout.

**Secret Ballot.** Especially since its 1856 adoption in Australia, the secret ballot has emerged as one of the most ubiquitous electoral institutions in the world. In theory, the secret ballot renders vote buying unenforceable because machines cannot verify whether reward recipients actually switch their vote choices. But in practice, machines employ a variety of tactics to violate ballot secrecy. For example, parties in the Philippines give out carbon paper so voters can copy their ballots, and Italian parties lend mobile phones with cameras so reward recipients can photograph how they vote (Schaffer and Schedler 2007, 30–31). Although such tactics continue to facilitate vote buying, it is generally accepted that the secret ballot reduces vote buying by making it costlier to monitor vote choices (e.g., Cox and Kousser 1981; Rusk 1974; Stokes 2005).

Evidence also suggests that ballot secrecy affects abstention buying (e.g., Cox and Kousser 1981; Heckelman 1998). Most prominently, a quantitative study of rural newspaper articles by Cox and Kousser (1981) finds that abstention buying (what they call “deflationary fraud”) increased when ballot secrecy was introduced in New York State. They quote a Democratic state chairman: “Under the new ballot law you cannot tell how a man votes when he goes into the booth, but if he stays home you know you have got the worth of your money” (1981, 656). Whereas Cox and Kousser (1981) do not conduct formal analyses,

our model illustrates the logic behind their findings. As an additional contribution, our model also helps to explain a counterintuitive result in their analysis (discussed below).

The model’s comparative statics offer insights into the effects of ballot secrecy on each strategy. To analyze these effects, we relax the assumption that the machine can costlessly monitor vote choices and sanction reward recipients who vote against the machine. The machine incurs these costs, which are captured by a parameter  $\beta \geq 1$ , when rewarding citizens who prefer the opposition. Introducing  $\beta$  changes the payment equations for strategies that target opposers: now  $\bar{b}_i^{VB} = \beta(-2x_i)$  for vote buying, and  $\bar{b}_i^{DP} = \beta(c_i - x_i + x^M)$  for double persuasion.<sup>31</sup> Recall from Proposition 1 that without the secret ballot, the most expensive price the machine optimally pays for vote buying is twice as much as for the other strategies:  $b_{VB}^* = 2b_{TB}^* = 2b_{DP}^* = 2b_{AB}^*$ . As shown in the online appendix, a machine facing ballot secrecy takes into account the cost of monitoring and sanctioning opposers when setting the most expensive payments:  $\beta(b_{VB}^*) = 2b_{TB}^* = \beta(2b_{DP}^*) = 2b_{AB}^*$ . Given that ballot secrecy makes strategies targeting opposers more expensive, the machine engages in less vote buying and double

<sup>31</sup>The original payment equations for these strategies (equations 2 and 5) are a special case of this more general setup where  $\beta = 1$ .

persuasion ( $\frac{\partial VB}{\partial \beta} < 0$ ,  $\frac{\partial DP}{\partial \beta} < 0$ ), and more abstention buying and turnout buying ( $\frac{\partial AB}{\partial \beta} > 0$ ,  $\frac{\partial TB}{\partial \beta} > 0$ ). As shown graphically (compare Figures 3 and 4b), fewer citizens receive payments for vote buying (“Vs”) and double persuasion (“Ds”), whereas more citizens receive payments for abstention buying (“As”) and turnout buying (“Ts”).

These predictions are consistent with Cox and Kousser’s (1981) finding that ballot secrecy increases abstention buying and provide insights about mechanisms underlying this change. Our model also helps to explain a puzzling finding in Cox and Kousser’s quantitative analysis with respect to “inflationary fraud”—their term for payments to voters that increase the machine’s vote tally. The authors find that inflationary fraud remained relatively *constant* with the introduction of the secret ballot law (1981, 657). This finding ostensibly contradicts the observations of many scholars and journalists who posit that the introduction of ballot secrecy substantially decreased vote buying in the United States.<sup>32</sup> Our model provides an explanation for this apparent discrepancy. When tallying inflationary fraud, Cox and Kousser lumped together vote buying and turnout buying because both strategies “inflate” the number of votes received by the machine.<sup>33</sup> But ballot secrecy has *opposite* effects on vote buying and turnout buying. The authors thus conflate two strategies with countervailing effects, which helps explain why they find no effect of the secret ballot. It should be noted that historical New York newspaper articles emphasized machines’ use of turnout buying—not just abstention buying—after the introduction of the secret ballot. For example, the *New York Herald* observed in 1912 that some partisan supporters “refuse to vote at all unless they are paid for it. . . . Their plea is that they must have a few dollars to compensate them for their ‘loss of time’ in going to the polls.”<sup>34</sup> Even a *New York Times* article cited by Cox and Kousser (1981) discusses turnout buying as well as abstention buying in 1894: “Ten times that amount, it is said by visitors of that county, is needed to properly get

out such voters as desired and keep others at home.”<sup>35</sup> Overall, our model predicts that ballot secrecy influences all strategies of electoral clientelism, not just vote buying and abstention buying as recognized by the existing literature.

***Salience of Political Preferences.*** In addition to institutional factors, the model suggests that characteristics of the electorate also affect machines’ mix of clientelistic strategies. For various reasons, voters in some contexts place relatively more value on political preferences than material rewards. For example, many studies suggest that clientelism is more prevalent in poor or rural areas, where the electorate tends to be relatively less responsive to policy platforms than to handouts (Kitschelt and Wilkinson 2007; Powell 1970).<sup>36</sup> What the existing literature fails to clarify is that political salience has differential effects *across* strategies of electoral clientelism.

To explore this point, we analyze the salience of political preferences by introducing a parameter  $\kappa > 0$  into the utility function of citizens (equation 1):  $U_i^M = -\kappa|x^M - x_i| - c_i$ .<sup>37</sup> The parameter  $\kappa$  represents the importance of expressing one’s political preferences, relative to the cost of voting. As the salience of political preferences increases (i.e.,  $\kappa$  increases), the turnout-indifference vertex becomes steeper and shifts downward. This downward shift decreases the number of cheap vote buying targets (such as Veronica in the stylized example), who are weak opposing voters clustered along the vertical axis under the vertex. Given that the number of cheap vote buying targets decreases, the machine decreases vote buying ( $\frac{\partial VB}{\partial \kappa} < 0$ ) and increases turnout buying, abstention buying, and double persuasion ( $\frac{\partial TB}{\partial \kappa} > 0$ ,  $\frac{\partial AB}{\partial \kappa} > 0$ ,  $\frac{\partial DP}{\partial \kappa} > 0$ ).

The model not only sheds light on how levels of political salience affect the mix of strategies, but it also offers intriguing predictions about the effects of shocks to this factor. For example, consider the possibility that an economic shock during a campaign leads citizens to place greater value on clientelist handouts relative to political preferences (i.e.,  $\kappa$  decreases). The model predicts that such shocks would increase vote buying as well as

<sup>32</sup>For example, see Rusk (1974); Heckelman (1998); “Election Corruption in New York State,” *The Evening Post: New York*, January 8, 1917; and “Here and There,” *The Niagara Falls Gazette*, October 10, 1936.

<sup>33</sup>For a specific instance in which turnout buying and vote buying are explicitly conflated as “inflationary fraud,” see the discussion of farmers in Cox and Kousser (1981, 661). It should be noted that the authors actually conflate vote buying, turnout buying, and double persuasion under the label “inflationary fraud.”

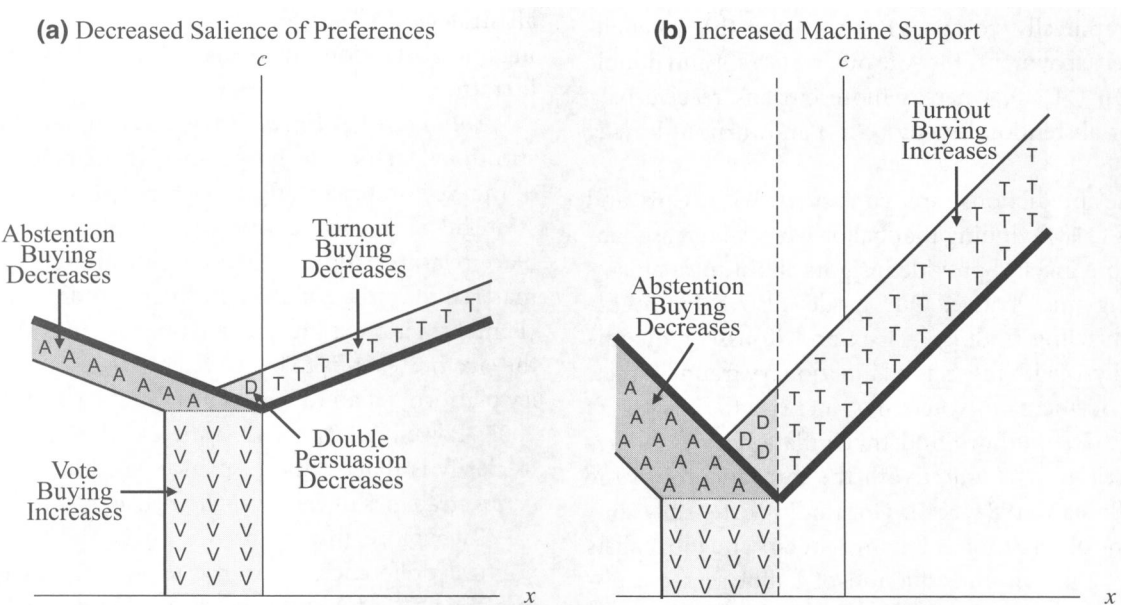
<sup>34</sup>“How Radical Leaven Swells Campaign Dough,” *New York Herald*, July 14, 1912.

<sup>35</sup>“Money Flowing In and Out,” *New York Times*, November 2, 1894. To clarify, Cox and Kousser (1981) cite this article in reference to abstention buying, but they do not mention the quotation regarding turnout buying.

<sup>36</sup>While the comparative statics focus on how political preferences differ across political contexts, it should be noted that the relative salience of political preferences may also vary across citizens within a given context (e.g., see Corstange 2010; Dixit and Londregan 1996; Stokes 2005).

<sup>37</sup>Observe that equation (1) is a special case of this setup, in which  $\kappa = 1$ .

FIGURE 5 Comparative Statics (continued)



Note: (a) Decreased salience of preferences reduces citizens' willingness to incur voting costs. The vertex flattens and shifts up. The machine reallocates its budget toward cheap vote buying targets ("Vs").  
(b) Increased machine support suggests that more citizens—all those to the right of the dotted line—are now machine supporters. The machine reallocates its budget toward cheap turnout buying targets ("Ts").

decrease other strategies. The vertex becomes less steep and shifts upward, which increases the number of cheap vote buying targets. As shown graphically (compare Figures 3 and 5a), more citizens receive vote buying payments ("Vs"), while fewer citizens receive payments for turnout buying ("Ts"), abstention buying ("As"), and double persuasion ("Ds"). Consistent with our model's predictions, several newspaper articles report that vote buying increases during economic shocks caused by droughts. As one article in the Philippines quotes a senatorial candidate: "The drought will lead to hunger and desperation, thus making vote buying a more viable option for candidates with resources."<sup>38</sup> Similarly, an article on the impact of El Niño droughts in Northeast Brazil quotes a Catholic bishop: "It's easier to buy votes when the people are starving and will agree to anything for food."<sup>39</sup>

Beyond political salience, the model also provides insights about two other characteristics of political environments. We mention these findings briefly to identify directions for future research, given that evidence about the following predictions remains unavailable.

**Machine Support.** Another comparative static examines the level of political support for the machine. We conceptualize machine support as the proportion of citizens who prefer the machine's platform over the opposition party's platform. Comparative statics suggest that an increase in machine support increases turnout buying ( $\frac{\partial TB}{\partial \bar{x}} > 0$ ), decreases abstention buying ( $\frac{\partial AB}{\partial \bar{x}} < 0$ ), and has no effect on vote buying or double persuasion ( $\frac{\partial VB}{\partial \bar{x}} = 0$  and  $\frac{\partial DP}{\partial \bar{x}} = 0$ , respectively). To analyze this comparative static, we unpack citizens' political preferences such that  $x_i = \bar{x} + \epsilon_i$ , where  $\bar{x}$  represents the political preferences of the median voter, and  $\epsilon_i$  captures individual-specific deviation from the median voter.<sup>40</sup> A rise in support for the machine's platform increases  $\bar{x}$  and shifts the turnout indifference vertex left. This leftward shift increases the number of cheap turnout buying targets, who are supporting nonvoters clustered just above the right-hand side of the vertex. In order to buy these supporting nonvoters, the machine reallocates resources from abstention buying to turnout buying. As shown graphically (compare Figures 3 and 5b), more citizens receive turnout buying payments ("Ts"), and fewer

<sup>38</sup>"Dry Spell May Encourage Vote Buying," *Sun-Star Cebu*, March 1, 2000.

<sup>39</sup>"Drought Brings Misery to Brazil," *Associated Press*, May 1, 1998.

<sup>40</sup>The utility function for machine supporters (equation 1) thus becomes  $U_i^M = -|x^M - (\bar{x} + \epsilon_i)| - c_i$ . Observe that equation (1) is a special case of this setup, in which  $\bar{x} = 0$  (i.e., in the original setup, the machine party and opposition party have equal levels of political support).



citizens receive abstention buying payments (“As”). Substantively, this comparative static suggests that a machine operating in several political districts will optimally tailor its clientelist mix according to political support. When distributing benefits in districts with many loyalists, the machine employs relatively more turnout buying. But in opposition bailiwicks, it employs relatively more abstention buying.

**Political Polarization.** The model’s comparative statics also suggest that characteristics of a party system influence the mix of electoral clientelism employed by a machine. We examine political polarization, which we conceptualize as the ideological distance between parties (formally,  $|x^M - x^O|$ ). Increased political polarization is predicted to decrease vote buying ( $\frac{\partial VB}{\partial (x^M - x^O)} < 0$ ), increase turnout buying ( $\frac{\partial TB}{\partial (x^M - x^O)} > 0$ ), increase abstention buying ( $\frac{\partial AB}{\partial (x^M - x^O)} > 0$ ), and increase double persuasion ( $\frac{\partial DP}{\partial (x^M - x^O)} > 0$ ). Observe that as polarization increases, voters with moderate ideological preferences receive less expressive utility from voting because the ideological distance from their preferred party grows. As a result, some voters no longer come to the polls, and the vertex shifts down (not shown graphically). This downward shift decreases the number of cheap vote buying targets, who are weak opposing voters clustered along the vertical axis under the vertex. As the number of cheap vote buying targets decreases, the machine (1) reallocates resources from vote buying to turnout buying, abstention buying, and double persuasion, and (2) reallocates resources within vote buying from the lost cheap targets towards costlier opposing voters. In sum, the model suggests that machines rely relatively more on mobilizational strategies where political polarization is high, and they rely relatively more on vote buying where it is low.

Overall, the comparative statics analyses above yield important predictions about five characteristics of political environments: compulsory voting, ballot secrecy, political salience, machine support, and political polarization. These predictions, which are summarized in Table 1, lay the groundwork for potentially fruitful research agendas that have thus far largely remained unexplored.

## Discussion

This article provides insights into the logic of electoral clientelism. Although most studies focus exclusively on vote buying, our analysis suggests that political machines maximize their electoral prospects by using rewards for both persuasion and mobilization. We

argue that machines are usually most effective when they combine at least four strategies—vote buying, turnout buying, abstention buying, and double persuasion. Overall, our analysis also unifies in a common framework how machines choose their particular mix of clientelism.

This study has identified numerous reasons why political machines often adopt different portfolios of clientelist strategies. Machines consider both individual and contextual factors when deciding how to distribute benefits during campaigns. Two attributes of individuals—political preferences and voting costs—determine the prevalence of cheap targets for each strategy. Machines also adapt their mix of clientelist strategies to contextual factors. For example, our model suggests that relatively more vote buying will be observed in contexts with compulsory voting, weak ballot secrecy, low salience of political preferences, and low political polarization. By contrast, relatively more turnout buying is predicted in contexts with optional voting, strong ballot secrecy, high salience of political preferences, strong machine support, and high political polarization.

An essential next step is testing our predictions rigorously. Empirical tests should rely on both quantitative and qualitative methods, employing enhanced data collection and identification strategies. To date, analysis of varieties of clientelism has been hampered by data-collection efforts that focus exclusively on vote buying. To address this issue, survey and interview research should explicitly attempt to ascertain whether rewards are used to influence vote choices or induce electoral participation. For example, panel surveys could help identify the relative prevalence of strategies by capturing *ex ante* partisan preferences and inclination to vote (i.e., before receiving rewards). Another potentially fruitful approach to studying varieties of clientelism may involve more rigorous analysis of aggregate data.

In addition to rigorous empirical testing, another productive direction for future research involves further formal analysis. This article has focused on analyzing how and why a machine combines four strategies of electoral clientelism—vote buying, turnout buying, double persuasion, and abstention buying. Our aim has been to develop a formal model that is widely accessible and that contributes both conceptual clarity and analytical rigor to research on machine politics. We have thus sought to maintain comparability to two influential articles: Stokes’s (2005) study of vote buying and Nichter’s (2008) study of turnout buying. One consequence is that we focus on contexts where one or more machines may operate, but where each machine controls different communities. Although we agree with Stokes (2005, 324) that



TABLE 1 Predicted Impact of Contextual Changes on Clientelist Strategies

Contextual Change	Vote Buying	Turnout Buying	Abstention Buying	Double Persuasion
Compulsory Voting Introduced	<i>Increases</i>	<i>Decreases</i>	<i>Decreases</i>	<i>Decreases</i>
Ballot Secrecy Introduced	<i>Decreases</i>	<i>Increases</i>	<i>Increases</i>	<i>Decreases</i>
Decreased Political Salience	<i>Increases</i>	<i>Decreases</i>	<i>Decreases</i>	<i>Decreases</i>
Increased Machine Support	<i>No Change</i>	<i>Increases</i>	<i>Decreases</i>	<i>No Change</i>
Increased Political Polarization	<i>Decreases</i>	<i>Increases</i>	<i>Increases</i>	<i>Increases</i>

“dueling machines” is a relatively unusual phenomenon, we acknowledge that in some contexts such as Zambia, multiple machines may engage in direct competition by offering rewards to the *same* citizens. A particularly useful further line of formal analysis might therefore ask: how would two or more machines allocate resources across clientelist strategies in a context of direct competition?

To examine this question, one could move away from Stokes’s (2005) original game by introducing a second machine party into the analysis. As in our current setup, the two parties could be modeled as having opposite policy preferences, but the opposition party would also offer targeted handouts. Each machine would seek to maximize net votes subject to a budget constraint. Such analysis, however, presents significant challenges. A distributional conflict involving two competing parties with more than two targets is likely to resemble blotto games, which generally do not have pure-strategy equilibria and often have very complicated mixed-strategy equilibria (Golman and Page 2009). To overcome this challenge, restrictive assumptions would have to be made. For example, parties could make clientelist offers sequentially, such that one party makes the first offer and the second party counters. Additional assumptions would then need to be imposed about whether there is a fixed order of offers and counteroffers or whether both machines can make multiple offers during a specified time interval. Such a setup raises numerous possibilities, such as one machine preemptively buying a supermajority in order to intimidate the opposition from counteroffering (e.g., Groseclose and Snyder 1996; Morgan and Várdy 2012). Future formal work should explore the extent to which electoral clientelism differs in contexts where “dueling machines” directly compete to offer rewards to the *same* citizens.

There are other important avenues of research for formal analyses to investigate. Our analysis of comparative statics assumes that political preferences and voting costs (i.e.,  $x_i$  and  $c_i$ ) are distributed uniformly. This simplifying assumption facilitates analysis of whether changes in contextual factors increase or decrease the prevalence of each strategy. Varying the distribution of  $x_i$  and  $c_i$  to reflect

specific political environments would provide further insights, such as the effect of contextual factors on the *overall* prevalence of electoral clientelism. In addition, future research should examine how regime type affects the mix of electoral clientelism. For example, although many authoritarian regimes distribute benefits during elections (e.g., Blaydes 2010; Magaloni 2006), they may be more likely to use coercive measures while engaging in clientelist exchanges. Formal examination of such factors, as well as potential interactions across factors, would further enhance our understanding of electoral clientelism.

Expanding formal and empirical analyses beyond elections is also crucial. The present article focuses exclusively on electoral clientelism, which provides all benefits before voting. This focus provides valuable insights about strategies that remain poorly understood, but clientelism obviously involves a broader set of strategies than just elite payoffs to citizens at election time. An important avenue for further research is understanding the mechanisms that facilitate such “relational” clientelism (Nichter 2010), which involves ongoing relationships and promises of future benefits. A related issue is the link between electoral clientelism and relational clientelism. For example, do longer-term clientelist relationships typically represent substitutes for—or complements to—vote buying and turnout buying? And more broadly, given that clientelist strategies are part of a portfolio of tools for obtaining electoral support (Calvo and Murillo 2010; Estévez, Magaloni, and Diaz-Cayeros 2002, 5–6), how do parties allocate resources between clientelist and programmatic strategies (e.g., campaign advertising)?<sup>41</sup>

Such questions provide important directions for future research on clientelism, a topic with significant policy implications. With respect to the present study, our findings suggest that policy shifts may shape the mix of strategies employed by political machines, with potentially serious implications. Different strategies may

<sup>41</sup> Another direction for future research is exploring whether portfolios of tools are similarly used for *legislative* vote buying (e.g., Dal Bó 2007; Groseclose and Snyder 1996; Nichter 2013).

entail distinct political and social consequences. For example, our model predicts that the introduction of compulsory voting decreases turnout buying and increases vote buying. Yet the normative implications of inducing turnout may well be less pernicious than paying citizens to vote against their preferences (Hasen 2000, 1375–78, 1370). Given such normative considerations, further research on how different policies affect patterns of clientelism could help inform policy debates.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

### Proofs of Propositions 1–3 Comparative Statics