

BIG DATA ANALYTICS AND HOW TO BUY AN ELECTION

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We show how to lawfully buy an election. The key things that make it possible to buy an election are the existence of public voter registration lists and the existence of Big Data Analytics that can predict how a given elector will vote in an election. Someone interested in buying an election can enter an employment contract with some of the opponent electors where these electors are paid to do a job that prevents them from voting. By purchasing access to public voter registration lists, it is possible to verify *ex post* whether the opponent electors have abstained. In the last two sections, we discuss several barriers that can undermine an attempt to buy an election in the manner we identify.

I. INTRODUCTION

In this article, we show how it is possible to lawfully buy an election.¹ The method we describe for buying an election is novel. The key things that make it possible to buy an election are (1) the existence of public voter registration lists where one can see whether a given elector (E) has voted in a particular election, and (2) the existence of Big Data Analytics (BDA) that with a high degree of accuracy can predict how a given elector will vote in an upcoming election.² Someone interested in buying an election can enter an employment contract with all or some of the opponent electors where these electors are paid to do a job that prevents them from voting.³ By purchasing access to the public voter registration lists, it is possible to verify *ex post* whether the opponent electors that one has signed a contract with have abstained. The method we describe for buying an election is one that revolves around the practice of negative vote buying. “Negative vote buying,” an established term in the literature,⁴ denotes the practice of paying electors to abstain from voting.⁵

The method for buying an election can be used in all electoral districts that have voter registration lists containing information about whether a given elector voted in the latest election and where access to this information is open to the relevant individuals or organizations.⁶ In this article, we describe how the general method for buying an election can be used in a US context. This means that we primarily use empirical data from US elections and US legislation.

Is it a problem that it is possible to buy an election? Some theorists, such as Michael Sandel,⁷ Debra Satz,⁸ and Robert Dahl,⁹ think that money influences politics too much, and it is clear that when one buys an election, money influences politics. They think that money should play a minimal role when it comes to deciding political elections, and they are in favor of rather strict campaign finance regulations.¹⁰

Other theorists are more comfortable with money playing a role in deciding elections and have defended markets in votes. Freiman defends a legal right to buy and sell votes.¹¹ Taylor¹² and Brennan¹³ defend a moral right to buy and sell votes.¹⁴ In this article, we are agnostic about the normative issue of what role money should play in politics in general as well as what role it should play in deciding elections.

The article is structured as follows: In section 2, we give a brief account of voter registration lists and explain what type of information they commonly contain. We also explain how BDA can be used to accurately predict how electors will vote in an upcoming election. In section 3, we offer an example of a generic employment contract that can be used by an individual who is interested in buying an election. In section 4, we discuss the novelty of how the combination of BDA and voter registration lists enables an individual to buy an election. In sections 5 and 6, we discuss several barriers that can undermine an attempt to buy an election in the manner we identify.

Let us end this introductory section by emphasizing that we do not endorse anyone's attempt to buy an election in the manner we describe. With this article, we hope to draw attention to the fact that state-of-the-art BDA makes it possible to buy an election in electoral districts in which there are voter registration lists that contain the voting history of electors. If one finds this possibility disturbing, then there is a *pro tanto* reason to work for the implementation of one, or more, of the three regulatory policy proposals we describe in the final section of the article.

2. VOTER REGISTRATION LISTS AND BIG DATA ANALYTICS

In this section, we explain how voter registration lists work in a US context, and we give an account of the basic features of BDA. In the United States, E has to register with the state she lives in to be able to vote. That is, E has to do something active to get on her state's voter registration list. Which pieces of information are included on the list will vary from state to state. A list can contain information

about E's residential address, gender, registration date, and date of birth.¹⁵ In some states, such as Alaska, the voter registration list does not include information about a voter's date of birth, social security number, voter ID number, place of birth, or signature.¹⁶ In other states, such as Alabama, the only thing the list may explicitly *not* contain is a voter's social security number.¹⁷ In every state, the list contains the voting history of all electors in that state.¹⁸

That voter registration lists contain the voting history of electors means that information about *whether* individual electors have voted in elections is publicly available for a fee. It does not mean that information about *how* individual electors have voted in elections is available. If such information were available, the institution of the secret ballot would be annulled. Annuling this institution would be highly controversial given that it is an entrenched democratic institution.¹⁹

It varies from state to state who may purchase access to the state voter registration list. In New Hampshire, for example, neither researchers nor nonprofit organizations are allowed access, while political committees and candidates are allowed access.²⁰ In Michigan, everyone may purchase access, but only for non-commercial purposes.²¹ A political party can purchase all the information contained in all the voter registration lists for all federal states.²² It will cost an estimated US\$ 136,671 if a political party wants to purchase access to *all* available information from *all* states.²³

Moving on to BDA, it is important to describe some basic features of this type of analytics.²⁴ Using BDA makes it possible to find statistical correlations in big data sets and to make predictions based on these correlations. This means that when an individual (or a political campaign or a company) has access to large amounts of data about electors, and she has state-of-the-art BDA technology at her disposal, she can predict with a high degree of accuracy whether E will vote in an upcoming election and, on the assumption that E will vote, whom she will vote for (which party or candidate). These predictions are often based on widely available data about individual electors that these individuals voluntarily share. These data include data about age, gender, race, income, education level, religious observance, postal address, and what type of car one owns. Owning a pickup truck correlates, for example, with voting for the Republicans, while owning a sedan correlates with voting for the Democrats.²⁵

With access to only twelve data points, it is possible to predict with accuracies exceeding 90 percent for certain demographic groups, whom members of a group will vote for in an upcoming election.²⁶ Note that things get more complicated if we move from a *de facto* two-party system like the one in the United States to a multi-party system like the one in Germany or Israel. In such a multi-party system, a predictive algorithm using only twelve demographic data points is likely to be less accurate than a similar one in a two-party system.

Political parties have access to large amounts of data about electors. For instance, the Republican National Committee and the Democratic National

Committee each have more than nine hundred data points on every American elector.²⁷ With access to digital behavioral data, such as data about whom E is friends with on Facebook or which posts E likes on Facebook, one can get a rather fine-grained picture of the electors' political preferences.²⁸ If political campaigns and/or political parties do not have access to electors' Facebook data (or data from other social media platforms), they can, and often do, hire a private company to collect and analyze these data for them.²⁹

It is important to note that with state-of-the-art BDA, it is not only possible to make accurate predictions of voting behavior at the group level; it is also possible to predict with significant accuracy how individual electors will vote. In an important article in the *Journal of Economic Perspectives*, Nickerson and Rogers describe how political campaigns can use BDA to predict voting behavior at the individual level.³⁰ The BDA methods have only become more sophisticated since 2014, and the method for buying an election we describe in this paper is therefore likely to be even more effective than it would have been in 2014.

3. HOW TO BUY AN ELECTION

To exemplify how it is possible to buy a US election, consider the following example. In a hypothetical electoral district, there are one thousand electors.³¹ They can choose between two candidates from two different parties: candidate D from party ALPHA and candidate R from party BETA. Individual K wants candidate R to win the election. K contacts a data analytics company and asks it to scrape publicly available data, including data generated by social media activity, on each of the one thousand electors. K then asks the company to give a prediction concerning whom each elector will vote for in the upcoming election. She then contacts each elector who is identified as likely to vote for candidate D and asks each such elector if that person is interested in entering an employment contract with her. Here is the generic version of the employment contract K sends out (henceforth, the Employment Contract):

Employment Contract

I, [Name], must on date X, between time Y and time Z, be out of the county in which I officially reside, and I must, throughout the day, be engaged in trash collection in public spaces.

I, [Name], will be eligible for payment (W dollars) as soon as I have signed this contract.³²

In the United States, E can vote in one of three ways. She can vote in person on Election Day, she can vote early by mail, or she can vote early in person. The Employment Contract bars E from voting on Election Day by keeping E away

from her polling station. It does not bar E from voting through the two means of early voting. It is helpful to say more about the Employment Contract.

First, the specific contracts sent out to D electors do not contain the variables X, Y, Z, and W. These variables will be replaced with specific numbers. X is the date of the election. Y is the time at which polling stations in E's home county open. Z is the closing time of polling stations in E's home county. W is the amount of money K offers to E. The contract will be sent to E shortly after the deadline has passed for registration for early voting by mail and early voting in person.

Second, in a US legal setting, K cannot lawfully pay E or offer her any other expenditure not to vote. The reason for this is that it is illegal to offer someone an expenditure in exchange for abstaining. It is also illegal to accept such an offer. Consider this federal law:

Whoever makes or offers to make an expenditure to any person, either to vote or withhold his vote, or to vote for or against any candidate; and Whoever solicits, accepts, or receives any such expenditure in consideration of his vote or the withholding of his vote—Shall be fined under this title or imprisoned not more than one year, or both; and if the violation was willful, shall be fined under this title or imprisoned not more than two years, or both.³³

Prima facie, K does not violate this law by offering the Employment Contract to E since K does not offer E money to withhold her vote. In the Employment Contract, the words “voting” and “vote” do not occur. However, it is an implication of signing the Employment Contract that E cannot vote on Election Day without breaching an employment contract she voluntarily entered.

Another important US federal election law is 42 U.S.C. § 1973i(c). The relevant aspect of it reads like this:

Whoever knowingly or willfully gives false information as to his name, address or period of residence in the voting district for the purpose of establishing his eligibility to register or vote, or conspires with another individual for the purpose of encouraging his false registration to vote or illegal voting, or pays or offers to pay or accepts payment either for registration to vote or for voting shall be fined not more than \$10,000 or imprisoned not more than five years, or both.³⁴

Prima facie, K does not violate this law either. The reason for this is that the law is silent on the issue of whether someone can pay an elector for abstaining. In section 5, we return to the important legal issue of whether K complies with the law. We do this by undertaking a lengthy examination of whether it is likely that US courts will deem the Employment Contract invalid.

Third, the contract E receives from K is delivered electronically, and E can sign it electronically. If E does not sign the contract within 12 hours of receipt, a new contract will be sent to E where the amount of money offered to E has increased. The amount offered to E in the original contract, as well as the increased amount

in the second contract, is something that is determined on an individual basis by the prediction algorithm like the one used to identify E as a likely D-elector. If E does not sign the second contract within the 12-hour window, a third contract will be sent to her with an increased monetary offer. This procedure will continue, with a pre-decided price-ceiling, until the point where either E signs the contract or voting starts in E's home county.

It is important to be aware that for K to be successful in buying the election, she does not need to sign a contract with every D-elector. She only needs to sign a contract with enough D-electors.³⁵ Moreover, K can be successful even if some of the electors who sign the Employment Contract end up voting. The reason for this is that what K needs is only that enough D-electors abstain. How many D-electors are "enough" is relative to each election and depends on a number of variables. We will discuss the most important of these variables in detail later.

Fourth, the company that K has engaged is likely to be able to predict how much money individual D-electors are likely to demand to sign the contract with K. It is this predicted amount that will figure in the original contract that E receives. If the algorithm predicts that E's price is above K's price-ceiling, K offers the maximum amount that she is willing to spend on an individual contract. It is important to stress that the Employment Contract is constructed in such a manner that the cost K incurs from E signing the contract is relatively modest. By signing the Employment Contract, E incurs two types of costs: transportation costs associated with out-of-county travel and opportunity costs. The latter comes in at least two varieties: costs associated with the inability to engage in other paid work on Election Day, and costs associated with the inability to engage in non-paid (social) activities. These costs must be borne by K and must be reflected in the amount of money K offers E to sign the Employment Contract.³⁶ Given that these costs vary from voter to voter, voters whose costs are low are often more attractive to K than voters whose costs are high. Therefore, it is often strategically wise for K to focus her attention on electors within the former group. Also, it would be strategically smart for K not to offer the Employment Contract to D-electors in electoral districts where her favored candidate is likely to win without her interference.

Fifth, it should be recognized that in real-life examples involving K and millions of electors, K's attempt to buy the election will cost a significant amount of money. Each of the contracts K signs may not be overly expensive to K, but the overall amount of money that K must pay for all the contracts she must sign can be vast. How much money K, in the end, must pay to buy the election is to a large extent dependent on empirical circumstances. These circumstances include (i) the number of electors, (ii) the electors' general political sympathies regarding individual candidates/parties, (iii) the strength of these sympathies, (iv) the level of E's transportation and opportunity costs, and (v) the closeness of the election. For example, in an election involving millions of electors, it may be that K only has to sign a few hundred contracts to achieve her desired political outcome. This

will be so when the election is close. On the other hand, in an election involving 100,000 voters, K may have to sign, say, eighty thousand contracts because most of the electors are committed D-electors. An important lesson to be learned from this is that it can be relatively cheap for K to buy an election even if it involves a large electorate, and that it can be relatively expensive for K to buy an election even if it involves a small electorate.

We suggest that for elections that are either close or are ones in which the majority of electors share K's political preferences but a significant part of this majority is likely to abstain, K's method for buying the election is unlikely to require an amount of money that lies beyond the financial resources of some wealthy individuals. In the 2000 US presidential race, George Bush won the state of Florida. He received 537 votes more than Al Gore. Six million votes were cast. This means that Gore would have won the state if 538 Bush voters had abstained on Election Day.³⁷ The point here is that the method we describe for buying an election is empirically feasible in the world we live in, and not only in the theoretical realm. History is full of examples of people being willing and able to pay enormous amounts of money to ensure certain political outcomes. A recent example is Michael Bloomberg's attempt to secure the Democratic Party nomination for the 2020 US presidential election.³⁸ Imagine how much money K would have at her disposal if she joined forces in a consortium with other wealthy R-supporters. If individuals as wealthy as Bloomberg, Forbes, and so on all decided to offer likely D-electors to sign the Employment Contract, the chance of R winning the election would be much higher than in a scenario in which K acts alone. Furthermore, imagine a scenario in which the consortium also included party BETA. This party could then throw a significant part of its campaign resources into the attempt to buy the election.³⁹ This would further amplify R's chance of winning the election.

4. WHAT IS NOVEL ABOUT THIS WAY OF BUYING AN ELECTION?

In this section, we discuss the novelty of how the combination of BDA, voter registration lists, and the Employment Contract enables an individual/consortium to buy an election. The phenomenon of negative vote buying existed long before the advent of BDA. For example, the Aboriginal peoples in Australia were not, as opposed to electors from other demographic groups, mandated to vote from 1962 to 1984. In that period, alcohol was often used to lure away Aboriginal people from the polls.⁴⁰ Between 2012 and 2016, vote buying occurred in 52.2 percent of all elections in Asia, 65.5 percent in post-Soviet countries, and 52.2 percent in Sub-Saharan Africa.⁴¹ However, the recent emergence of BDA makes it possible—on a large scale—to effectively pinpoint *who* the opponent voters are, *how* likely they are to vote for the opponent party, and *how much* money they are likely to demand to abstain. In combination, these three things mean that K

can now buy an election more effectively than before the emergence of BDA.⁴² Big data analytics technology and predictive algorithms are still in their infancy. We conjecture that predictive algorithms will increase in accuracy and that they will increase in accuracy in proportion to how many data points are being added for individual analysis. That is, in the future, predictive algorithms will likely be very accurate in predicting the future voting behavior of electors if they are fed not merely a few data points, but thousands—or even millions of data points.⁴³ Perhaps there will be some diminishing marginal accuracy since, at some point, each new data point begins to correlate so highly with existing data points that each new data point adds less extra accuracy. However, this does not alter the main point here, namely, that the Ks of the future will have at their disposal an improved BDA technology that will make their endeavor to buy an election more effective than K's current endeavor.

It should be noted that BDA has recently been used in an effort to influence voter behavior. The Trump campaign admitted that it ran three voter-suppression campaigns leading up to the 2016 presidential election. Based on huge amounts of personal data, the campaign tried to predict which electors were likely to vote for Clinton, and then encouraged these electors to abstain from voting.⁴⁴ This method is not identical to the method we describe for buying an election, since Trump's voter-suppression campaigns did not involve employment contracts. The method we describe for buying an election is more effective than the method used by the Trump campaign. This is so because K's scheme gives E a stronger incentive to abstain than the one offered by the Trump method. E's incentive is stronger for at least two reasons.

First, note that E accepts the offer of W dollars in exchange for doing a job that prevents her from voting. If receiving W dollars were not a sufficiently strong incentive for E to abstain, then presumably E would not have accepted the Employment Contract.⁴⁵ Second, E knows that if she does not comply with the contract, it can have legal repercussions for her. K can take her to court for breach of contract.⁴⁶ This gives E a strong incentive to comply with the contract, and this is an incentive that is absent in the method used by the Trump campaign. Moreover, from the perspective of the individual behind the attempt to influence voter behavior, K's method has an advantage as compared to the one employed by the Trump campaign. Prior to Election Day, K has more certainty about the outcome of her activities than the Trump campaign has at that point in time. Prior to Election Day, K knows the exact number of people who have signed the Employment Contract. This number gives her a detailed, though imperfect, picture of how many of the electors whom she has targeted will abstain. Prior to Election Day, the Trump campaign has no such picture. To get a sense of the effectiveness of the endeavor to influence voter behavior, the campaign has to rely on imperfect polling data about how electors who have been subjected to the voter suppression campaigns will vote.

5. THE COURTS AS A BARRIER TO K'S SUCCESSFUL ATTEMPT TO BUY AN ELECTION

In this section and the next, we discuss a range of barriers that can undermine K's attempt to buy an election. In this section, we focus on a legal barrier: the courts might decide that the Employment Contract is invalid.⁴⁷ If the courts deem the Employment Contract invalid, the proposed method for buying an election will not work. However, there is reason to think that the courts will deem the Employment Contract valid, on the assumption that the courts generally strive to be consistent. We offer three reasons for being confident that the courts will deem the Employment Contract valid. The first reason is that the courts already deem valid employment contracts that imply that the employee cannot vote. Consider, for instance, the hypothetical elector described below.

Susan is an unemployed chef from Houston. She plans to vote in the 2020 US presidential election on November 3. She registers to vote on October 5, and by October 23, she has not applied for a ballot by mail. Therefore, she cannot vote early by mail. On October 30, she receives an employment contract to work for ExxonMobil on an oil rig. Susan immediately signs the contract, although the deadline has passed for early voting in person. Susan leaves for the Gulf of Mexico on Monday, November 2, and she will be on the oil rig on Election Day. Under Texas law, it is an implication of Susan signing the contract and adhering to its terms that she cannot vote in the 2020 US presidential election.⁴⁸

If the Employment Contract is one that the courts deem invalid, then Susan's employment contract must be a contract that the courts deem invalid. After all, Susan's contract is also one that prevents Susan (the employee) from voting. If we are correct that the courts will not deem Susan's employment contract invalid, then it is, from a perspective of consistency, difficult to see why the courts will not deem the Employment Contract valid. The two employment contracts are identical when it comes to the following two key features: First, in each employment contract, an employer makes an expenditure to an employee. Second, it is an implication of each contract that any employee who signs it cannot vote. The two employment contracts are not identical in all aspects. The type of work that they require from the respective employees differs significantly. It is, however, difficult to see why this difference should be a concern for the courts given that (i) the work required by each of the two contracts is legally permissible, (ii) the work required by each of the two contracts is socially valuable, and (iii) all parties to the contracts are consenting adults.

The second reason why the courts will deem the Employment Contract valid is that it does not violate § 1973i(c), which is one of two relevant federal statutes of US election law. Recall that § 1973i(c) states: "Whoever knowingly or willfully . . . pays or offers to pay or accepts payment either for registration to vote or for voting shall be fined not more than \$10,000 or imprisoned not more than

five years, or both.” In *United States v. Garcia*,⁴⁹ the court upheld a decision from a lower court in which several defendants were convicted of violating § 1973i(c) because they offered welfare food vouchers to voters in return for their promises to vote absentee for certain local candidates in a Democratic primary election.⁵⁰ This court ruling does not apply to the Employment Contract because § 1973i(c) is asymmetrical in the sense that it only outlaws paying someone for voting or registering to vote. It does not outlaw paying someone to abstain from voting. This is important given that what K is doing cannot be interpreted as paying E for voting or registering to vote. Note that the defendants in *United States v. Garcia* were convicted for explicitly offering money, or something of monetary value, to buy votes. This is not what K does. She offers an employment contract. By offering the Employment Contract, K certainly adheres to the letter of § 1973i(c). K would be violating § 1973i(c) if she promised something of value to E in return for E’s promise to vote. K would also be violating § 1973i(c) if she gave something of value to E in exchange for E providing proof that she voted.⁵¹

The third reason why the courts will deem the Employment Contract valid is that it does not violate 18 U.S.C. § 597 (Expenditures to influence voting), which is the second of the two relevant federal statutes of US election law. Recall that § 597, *pace* § 1973i(c), implies that there is legal symmetry between “making an expenditure to make someone vote” and “making an expenditure to make someone withhold her vote.” Now consider election festivals as a get-out-the-vote tactic. Imagine that K uses this tactic. She then proceeds in the following manner: well before Election Day, K selects a voting site that is suitable for an election festival and seeks permission to hold a festival there. She then advertises the upcoming festival at the selected location. The festival essentially features free food and drinks as well as entertainment. The festival is open to everyone, regardless of whether they vote or are eligible to vote. Holding such a festival is legal under federal law, and there is strong empirical evidence that election festivals increase turnout rates significantly.⁵² It is evident from the literature on compulsory voting that making sure that electors turn up at polling stations is something that almost always make them vote.⁵³ It is therefore not surprising that if holding election festivals is something that attracts electors to the physical vicinity of polling stations, holding such festivals increases turnout. Green and McClellan also gauge the cost-per-vote of election festivals. On certain assumptions about the cost of the election festival as well as the number of registered voters in the electoral district in which the festival takes place, “festivals generate approximately 43.7 votes per precinct at \$48 per vote, which is quite good by the standards of rigorously evaluated get-out-the-vote programs.”⁵⁴

In a legal environment in which there is symmetry between making an expenditure to make someone vote and making an expenditure to make someone withhold her vote, and in which election festivals are legal, it is reasonable to

suppose that the courts will deem the Employment Contract valid. What are the potential disanalogies between holding an election festival and doing what K does in terms of sending out the Employment Contract? (1) If K holds an election festival, she does not make an expenditure to anyone in return of proof of vote. By sending out the Employment Contract, K does not do this either. (2) If K holds an election festival, she announces the festival before Election Day. K also sends out the Employment Contract before Election Day. (3) If K holds an election festival, she will likely make an expenditure to individuals who do *not* vote. If K sends out the employment contract, she will likely make an expenditure to individuals who *do* vote. *Prima facie*, this might seem like a disanalogy between the two activities. Here, it is, however, of crucial importance to remember that the two activities are being evaluated with reference to § 597, which treats making an expenditure to make someone vote symmetrically to making an expenditure to make someone withhold her vote. (4) If K holds an election festival in a voting district with historically low turnout and in which the vast majority of electors have a particular political preference (K can buy access to both types of information), K is willfully engaged in an activity that she knows is likely to have a partisan bias (favor one candidate/party over other candidates/parties). If K sends out the Employment Contract to electors with a particular profile (as she does), K is willfully engaged in an activity that she knows is likely to have a partisan bias (favor one candidate/party over other candidates/parties). (5) If K holds an election festival, K is likely to do this with the intention of increasing turnout among a select group of electors. If K sends out the Employment Contract, K is likely to do this with the intention of decreasing turnout among a select group of electors. (6) If K holds an election festival, K will be making an expenditure to identifiable electors (those electors who receive the free food/beverages or enjoy the entertainment at the festival). If K sends out the Employment Contract, K will be making an expenditure to identifiable electors (those electors who sign the contract).⁵⁵

Of course, if K sends out the Employment Contract and uses state-of-the-art BDA to decide whom to send the contract to, she can affect turnout and thereby increase the chances that her preferred political result will materialize much more effectively than if she organizes an election festival. It is, however, difficult to see how this disanalogy between the two types of activities could be legally relevant in light of § 597 and § 1973i(c).

Taking these arguments about the similarity between the Employment Contract and Susan's employment contract, the restricted scope of § 1973i(c) and the analogies between holding election festivals and sending out the Employment Contract in a legal environment in which § 597 is in place make it reasonable to proceed on the assumption that the courts will deem the Employment Contract valid.

6. OTHER BARRIERS TO K'S SUCCESSFUL ATTEMPT TO BUY AN ELECTION

Another set of barriers that can undermine K's attempt to buy an election revolves around modes of voting. The Employment Contract does not bar E from voting early. This means that all the D-electors who vote early are voters whom K cannot get to abstain by getting them to sign the Employment Contract. A significant number of D-electors are simply out of reach for K. To exemplify this problem, recall the example involving one thousand electors, and candidate D from party ALPHA, and candidate R from party BETA. Suppose that there are six hundred D-electors and four hundred R-electors. The latter will all vote. Assume that 401 of the D-electors vote early. Then, even if K has a perfect success rate and signs a contract with each of the remaining 199 D-electors, candidate D wins. This means that K was not able to buy the election. This general problem for K involving D-electors voting early can be exemplified in countless other ways involving different numbers, and it shows that when a big enough subset of the electorate behaves in a particular manner, K cannot buy an election. It is also worth noting here that K cannot control whether a big enough subset of the electorate behaves in the relevant manner.⁵⁶

Regulators can amplify the "voting-early" barrier by making it easier to vote early. Making early voting easier can be done in at least two ways. The period in which such voting is possible could be extended. Moreover, current US rules to the effect that one has to sign up/apply for permission to vote early could be scrapped such that by being eligible to vote automatically makes one eligible to vote early.

Consider next regulations for voting during working hours. In several US states, there are laws in place that give employees the right to take time off to vote. Such a right potentially undermines K's attempt to buy an election. Consider, for example, the scenario in which E signs the Employment Contract, and, on Election Day, takes time off to vote for D. In this scenario, K has paid E, E has not abstained, and K has no grounds for legal complaint against E. If enough other D-electors who have signed the Employment Contract also exercise their right to take time off to vote, then K's attempt to buy the election fails. How big a problem for K is it that electors in some states have the right to take time off to vote? Note that as of 2020, there are nineteen states in which employees are *not* entitled to take time off to vote.⁵⁷ In these states, K's attempt to buy a state election cannot fail because of employees' right to take time off to vote. Moreover, this aspect of US employment contract law also leaves intact K's attempt to buy a nationwide election. It might be that what K must do in order to buy such an election is to focus her efforts on only those nineteen states where electors do not have the right to take time off to vote. Importantly, a subset of these nineteen states consists of swing states.

Further, note the distinction between having a right to X and exercising the right to X. This distinction is important because what potentially undermines K's attempt to buy the election is the exercise of the right to take time off to vote—and not merely having this right. So, even in the states in which employees who have signed the Employment Contract have the right to take time off to vote, it is possible that these employees (or many of them) do not exercise their right. If none (or few) of them do not, K does not have a problem. The question of how many of the electors who have signed the Employment Contract will exercise their right to take time off to vote is an empirical one, which we are not in a position to answer.

It is, however, likely that not everyone who has the right will exercise it. The states where employees have a right to take time off to vote are of two types. There are states in which the employer pays for the time that the employee takes off to vote, and there are states in which the employee pays for this herself. In the latter states, of which there are seven, there is a significant opportunity cost associated with exercising the right to take time off to vote. This cost consists of a loss of personal income. The higher W is, the higher the amount is that E loses from exercising her right, and the more likely it is that E will not exercise her right.⁵⁸

Regulators can amplify the “voting-during-working-hours” barrier by changing US contract law such that all states give employees the right to take time off to vote. The issue of whether it is the employer or the employee who should pay for the time taken off to vote is a secondary one. For reasons laid out above, it is, however, likely that if this cost is borne by the employer, then more employees will exercise their right than if this cost is borne by the employee.

A further barrier to K's successful attempt to buy an election is that E can sign the Employment Contract and then claim to be sick on Election Day.⁵⁹ However, if E calls in sick, then E is supposed to stay at home. Now, if E calls in sick and goes voting, K will know about E going voting by checking the voter registration lists, and K can approach E afterward and say: “Dear E , you called in sick on Election Day and then went voting. If you are too sick to work, how come you were not too sick to go voting? I will now take legal means to try to recover the money I paid you. I feel that you have breached the contract.” Of course, K might not want to jump through all these hoops, but the important fact is that E can know that K has access to her voting records and can check whether E voted. If E has this knowledge, then this is something that is likely to make her hesitant to call in sick and then go voting.

Another barrier is that the polls are typically open for a longer period of time than the daily hours of a regular job. It might be illegal for K to offer an employment contract with such long hours that complying with the contract prevents the employee from voting.⁶⁰ However, the Fair Labor Standards Act (FLSA) of 1938 dictates policy for most workers. According to an interpretation of the FLSA

by the US Department of Labor, the act does not limit the number of hours in a day or days in a week an employee must work, including overtime hours, if the employee is at least 16 years old.⁶¹

Let us end this article by describing a third way in which regulators can undermine K's attempt to buy an election. Regulators can eliminate the voting history of individual electors from the voter registration lists. It is information about whether E has voted in the latest election that makes it possible for K to *ex post* verify whether E has fulfilled her contractual obligations. If E voted, then K knows that E violated the Employment Contract, and K can take legal action against E. If E did not vote, then K does not know if E has fulfilled her contractual obligations. After all, not voting is compatible with staying at home on Election Day and not collecting any trash in a county other than one's home county. However, K is likely to have no objections to this way of breaching the Employment Contract given that K's only interest is that E abstains.

If K has no way of verifying whether E has fulfilled her contractual obligations, entering the Employment Contract with E becomes nothing more than a gamble for K. There are two ways of eliminating the voting history of individual electors from the voter registration lists. The first is to eliminate the voter registration lists themselves. The second way is to keep the voter registration lists, but reform them such that the voting history of individual electors is removed from them.

We acknowledge that in addition to checking the voter registration lists, there are at least two ways in which K can verify that E has fulfilled her contractual obligations. First, K can dispatch a supervisor to monitor E's work on Election Day. This is not an attractive option for K given that she has to send out a multitude of supervisors on Election Day to a multitude of locations. This will greatly increase K's overall costs. Also note that the type of work involved in the Employment Contract is such that K cannot verify that the work has been done by checking on the day after Election Day. K cannot verify whether E has been collecting trash in the relevant time frame because K cannot measure how much trash there was at the beginning of the workday and then hold this up against her estimate of how much trash is lying around the day after. Second, E can include in the contract a requirement that E must install a tracing application on her phone and have it turned on throughout her working shift. K can then verify the whereabouts of E on Election Day and thereby verify that E has been out of her home county and away from her polling station. The use of tracing applications will not allow K to verify that E has been collecting trash, but given that the whereabouts of E on Election Day are what is important to K, this issue is of no real importance to K.

There are at least three reasons as to why the use of tracing applications is not an attractive option for K. First, K has to spend money on developing a tracing application of her own, and there are costs associated with checking the data generated by all the electors who signed the Employment Contract. Second, it is likely to significantly increase E's psychological discomfort associated with complying

with the Employment Contract if she has to consent to use a tracing application on Election Day. Given that K has to compensate E for this discomfort, the use of tracing applications increases K's overall costs. Put briefly, E is likely to demand something in return (more money) for giving K access to detailed information about her physical location. Third, it is easy for E to game K's use of a tracing application to verify whether E has fulfilled the Employment Contract. E can get somebody to take her phone and drive out of E's home county. E can also drive there herself, leave her phone somewhere (or pay someone to walk around with it for the whole day), drive back (and vote) and then collect her phone after the working shift. K can, of course, close these loopholes by requiring that the type of tracing application that E uses must be an ankle bracelet monitor that only K can fit and remove from E's foot. We conjecture that such a requirement hugely increases E's psychological discomfort, and that many electors, as a result of this increased discomfort, will either not sign the Employment Contract or demand a lot of money to do so. Such a demand drives up K's costs.

It is clear from the discussion in the preceding two sections that there are several conditions under which K cannot buy the election. For example, the courts deem the Employment Contract invalid; too many D-electors vote early; or too many D-electors, who sign the Employment Contract, take time off to vote on Election Day. Therefore, the method for buying an election described in this article is not foolproof. It does not always work. This fact does not, however, render the article irrelevant or uninteresting. It is still the case that there are many conditions under which K can buy an election and, importantly, some of these conditions obtain in real-life elections.

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NOTES

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1. To clarify, for x to “buy an election” means that x makes an expenditure to individual electors to influence their voting behavior (either to vote *simpliciter*, to abstain, or to vote for a particular candidate/party/proposition) such that x 's preferred election result is brought about.

2. In this article, we use “elector” to denote a person who has the right to vote in an election. The term is not used to denote a member of the US Electoral College.

3. For any individual/entity x , an “opponent elector” is any elector that votes, or intends to vote, for a candidate/party/proposition that is different from the one x supports.

4. Morgan and Várdy, “Negative Vote Buying.”

5. In the United States, there are mobile apps that allow you to see whether individual electors have voted. See, for example, the app VoteWithMe at <https://bit.ly/2x3Gfll>, or the app Outvote at <https://bit.ly/2IXEzfQ> (both accessed November 9, 2020).

6. This is on the assumption that BDA is available in these electoral districts. Moreover, as we will explain in detail later, there are several conditions under which this method can be used, but will be unsuccessful.

7. Sandel, *What Money Cannot Buy*.

8. Satz, *Why Some Things*.

9. Dahl, *On Democracy*.

10. For an illuminating discussion of various methods for limiting the effect of money on politics (including the effect of limiting private contributions to candidates or parties), see Christiano (“Money in Politics”).

11. Freiman, “Vote Markets.”

12. Taylor, “Two (Weak) Cheers.”

13. Brennan, *Ethics of Voting*.

14. Moreover, Volacu argues that there are at least two plausible *prima facie* reasons in favor of barter voting markets (“Electoral *Quid Pro Quo*”). Note, however, that in a barter voting market, money is not exchanged, and therefore money cannot be said to influence politics or decide elections.

15. See https://sos.ga.gov/index.php/elections/order_voter_registration_lists_and_files (accessed November 9, 2020).

16. See <http://voterlist.electproject.org/states/alaska> (accessed November 9, 2020).

17. See <http://voterlist.electproject.org/states/alabama> (accessed November 9, 2020).

18. See <http://voterlist.electproject.org/states>. See also <https://www.ncsbe.gov/results-data/voter-history-data> (accessed November 9, 2020).

19. Birch and Watt, “Remote Electronic Voting,” 62; Dahl, *On Democracy*, 96

20. See <http://voterlist.electproject.org/states/new-hampshire> (accessed November 9, 2020).

21. See <http://voterlist.electproject.org/states/michigan> (accessed November 9, 2020).

22. See <https://bit.ly/2ThiLk4> (accessed November 9, 2020).

23. See <http://voterlist.electproject.org/full-list-purchase-facts-and-info> (accessed November 9, 2020).

24. A recent definition in the literature regards BDA as “a new generation of technologies and architectures, designed to economically extract value from very large volumes of a wide variety of data, by enabling high velocity capture, discovery and/or analysis.” See Mikalef et al. (“Big Data Analytics Capabilities,” 273).

25. See Gebru et al. (“Using Deep Learning”).

26. See, for example, the tool on the *New York Times*’s website, where you can plot in demographic data about an elector, and the tool will tell you how likely the elector is to

vote for a certain party: <https://nyti.ms/2HHc8IN> (accessed November 9, 2020). See also a similar tool on *The Economist's* website at <https://econ.st/3c19aqr> (accessed November 9, 2020).

27. Moore, "Protecting Democratic Legitimacy."
28. Kosinski et al., "Personality and Website Choice."
29. Susser, Roesler, and Nissenbaum, "Online Manipulation."
30. Nickerson and Rogers, "Political Campaigns and Big Data."

31. The average size of a US congressional district, based on the 2010 Census apportionment population, is 710,767. See <https://www.census.gov/prod/cen2010/briefs/c2010br-08.pdf> (accessed December 13, 2020).

32. The exact type of work that the Employment Contract requires is not of crucial importance to the general point we make in this article. The Employment Contract could, for example, require that E sit at home all day on Election Day making telephone calls asking for donations to K's charity fund that pays for pediatric cancer treatment. Such an employment contract could even allow E to go to work on Election Day and merely require that E goes straight to work and goes straight home at the end of the workday.

33. 18 U.S. Code, § 597. See <https://www.govinfo.gov/app/details/USCODE-2010-title18/USCODE-2010-title18-partI-chap29-sec597> (accessed December 15, 2020).

34. 42 U.S.C. § 1973i(c). See <https://www.govinfo.gov/content/pkg/USCODE-2008-title42/html/USCODE-2008-title42-chap20-subchapI-A-sec1973i.htm> (accessed December 15, 2020).

35. K has access to the complete voting history of E. This information is useful for K, given that she tries to influence E's voting behavior. For example, if K's algorithm predicts that 60-year-old E is likely to be a committed D-electoral, but is given the input, from the voting registration list, that E has never voted, then the algorithm can be designed to ignore E (bar extraordinary circumstances such as E being explicit in social media posts that she *will* vote in the upcoming election).

36. How much does it cost to buy a single vote? This is a difficult question. The answer depends on what country and what economic context the attempted vote buying occurs in. In Chonburi province in Thailand, the going rate is reported to be around US\$ 9 per vote, but can rise as high as US\$ 90 (Cheeseman and Klaas, *How to Rig an Election*, 65). The reported prosecutions for US vote buying suggest that minimal payments are involved: US\$ 3 or US\$ 5, in one case. A US\$ 45 welfare voucher and a six-pack in another case, and US\$ 20 and US\$ 30 in other transactions (Karlán, "Not by Money," 1459). Hasen reports that before the rise of the secret ballot, costs were higher in constant dollars ("Vote Buying," 1329).

37. For statistics on this election, see <https://www.npr.org/2018/11/12/666812854/the-florida-recount-of-2000-a-nightmare-that-goes-on-haunting?t=1604406223180> (accessed November 9, 2020).

38. Bloomberg's failed US presidential campaign in 2020 cost him over US\$ 500 million. <https://www.businessinsider.sg/things-mike-bloomberg-bought-in-failed-500-million-presidential-campaign-2020-3?r=US&IR=T> (accessed November 9, 2020). Steve Forbes spent more than US\$ 76 million of his own money on an unsuccessful run at the US presidency in 2000—over US\$ 113 million in 2018 dollars. Donald Trump spent US\$ 66.1 million of

his own money on the 2016 US presidential election. Ross Perot spent US\$ 65.4 million of his own money on the 1992 US presidential election, and Rick Scott ran for the US Senate in 2018 and spent US\$ 63.6 million of his own money. <https://www.tampabay.com/florida-politics/buzz/2018/12/10/rick-scott-spent-63-5-million-on-his-u-s-senate-campaign-where-does-that-rank-all-time-among-political-self-funders/> (accessed November 9, 2020).

39. In the 2020 US presidential election, Joe Biden is expected to be the first candidate in American history to raise US\$ 1 billion through his campaign. <https://edition.cnn.com/2020/10/29/politics/2020-election-cost-money-trump-biden/index.html> (accessed November 9, 2020).

40. Morgan and Várdy, “Negative Vote Buying”; Orr, “Dealing in Votes.”

41. Cheeseman and Klaes, *How to Rig an Election*, 250.

42. Big data analytics also make it possible to predict how likely it is that E is persuaded by a given piece of political advertisement (Papakyriakopoulos et al., “Social Media and Microtargeting”).

43. It is likely that the development of predictive algorithms geared toward forecasting voter behavior follows a general development path that mimics that of predictive algorithms geared toward forecasting, for example, future crime spots, which students are likely to drop out, which inmates are likely to re-offend when released, and epidemic outbreaks around the world. Predictive algorithms geared toward forecasting these things have increased significantly in terms of accuracy. Consider, for example, this estimate from within the field of medicine:

Previous generations of algorithms were largely rule-based models, often requiring manual input of usually <10 variables, to provide clinical decision support for specific situations, such as guiding imaging for pulmonary embolism, with reasonable discrimination and calibration. Over the past 5 years, modern AI-based algorithms have enabled automated real-time prediction based on almost unlimited numbers of variables, with predictive performance superior to that of traditional algorithms. (Parikh, Obermeyer, and Navathe, “Regulation of Predictive Analytics,” 810)

44. Moore, “Protecting Democratic Legitimacy,” 96. Note that the Trump campaign did something that K is also doing: namely, they tried to predict how individual electors will vote, and tried to influence the voting behavior of these individual electors.

45. This is on the assumption that E knows that signing the Employment Contract prevents her from voting.

46. This is on the assumption that E knows that K can verify *ex post* whether E voted.

47. United States election law is complex. There are federal laws that govern elections in which one or more federal candidates are on the ballot. However, there are also state laws. These laws govern elections in which only state candidates are on the ballot. In this section, our focus is strictly on federal law. For an overview of the many state laws that govern state elections, see Hasen (“Vote Buying,” 1324n1).

48. Please see the following links for important 2020 dates for voting in Texas: <https://www.sos.state.tx.us/elections/voter/important-election-dates.shtml#2020> (accessed November 9, 2020).

49. United States v. Garcia, 719 F.2d 99 (5th Cir. 1983).

50. For the court opinion associated with the court's verdict, see <https://law.justia.com/cases/federal/appellate-courts/ca9/19-10073/19-10073-2020-09-10.html> (accessed December 9, 2020).

51. This point about providing proof of voting is an important one in US federal election law. It is legal for businesses/nonprofit organizations to hand out free food and/or offer discounts on various types of commercial products on Election Day as part of festivals/campaigns celebrating voting and/or democracy. Such businesses/nonprofit organizations must, however, make their offer available to everyone, and they cannot demand proof of voting as a requirement for receiving gifts or discounts. See <https://www.bolderadvocacy.org/wp-content/uploads/2016/04/Can-a-Nonprofit-Provide-Incentives.pdf>; <https://www.wsj.com/livecoverage/election-live-updates-trump-biden-2020-10-30/card/Ag7pZgu79eW5Z5ZMSk28> (accessed December 8, 2020). Some state laws permit activities that are not permitted under federal law. For example, Alaska law does prohibit a person from paying another person to vote for a particular candidate or proposition, but no Alaska statute prohibits a person from compensating another person for voting *per se* (for example, by reimbursing an elector for the cost of the fuel that she used to drive to the poll station (Hasen, "Vote Buying," 1326). Also, the Mississippi Supreme Court upheld the right of a candidate in a local election to hold a cash draw close to the voting precinct. On Election Day, 1,279 voters entered the cash-draw by signing a card and placing it in a box. A person at the box asked each entrant whether she had voted and instructed her to vote prior to placing her card in the box. After the polls closed, the drawing was held and the prize money was distributed to eleven winners. See *Naron v. Prestage*, 469 So. 2d 83 (1985) at <https://law.justia.com/cases/mississippi/supreme-court/1985/56113-0.html> (accessed November 16, 2020).

52. Green and McClellan, "Election Festivals."

53. Brennan and Hill, *Compulsory Voting*, 6; Birch and Watt, "Remote Electronic Voting," 60–72; Louth and Hill, "Compulsory Voting in Australia," 27.

54. Green and McClellan, "Election Festivals," 5.

55. In the eyes of the courts, what K is doing is different from what she would be doing if she merely walked around with a poster saying "Do Not Vote!" or made an expenditure to other people to make them either walk around with such a poster or broadcast the "Do Not Vote!" message on radio, TV, or social media platforms. If K did this, she would not be making an expenditure directly to individual voters to influence their voting behavior.

56. Most electors in a US presidential election do not vote early, though the trend is that more and more electors are voting early. In the 2016 US presidential election, slightly more than 40 percent of all electors voted early. See <https://www.eac.gov/documents/2017/10/17/eavs-deep-dive-early-absentee-and-mail-voting-data-statutory-overview> (accessed November 9, 2020).

57. See <https://www.businessinsider.com/take-time-off-from-work-to-vote-state-guide-2020-10?r=US&IR=T> (accessed November 9, 2020).

58. Recall that "W" denotes the amount of money offered to E for her to sign the Employment Contract.

59. We thank Sarah Birch for bringing this point to our attention.

60. We thank Sarah Birch for bringing this point to our attention.

61. See <https://legalbeagle.com/7736423-many-can-legally-work-day.html> (accessed December 3, 2020).

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