Legally Mandated Inconvenience:

Do Driver's License Suspensions Reduce Voter Turnout?

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I. Overview/Introduction

The vote is the fundamental building block of democracy; while it is not sufficient to

define democracy, it is absolutely necessary. However, simply casting a ballot has a cost,

and that cost is non-trivial. [1] Thankfully, the cost is not economic, but logistical. To vote

traditionally on Election Day,[2] one must find time away from her/his normal duties

(employment, child rearing etc.), and travel to the polling place during the hours it is

open, wait in line, discern a sometimes complicated ballot, vote, and leave. These are

small but definitively nonzero costs, which in a strictly rational sense would prevent

anyone from voting when compared to a small benefit of contributing to the outcome of

an election. Fortunately for proponents of self-rule, humans are not wholly rational, at

least in an economic sense, so people do vote, however unreliably.

Voter turnout is and shall always be far short of a theoretical ideal of full

participation. Perhaps the most noteworthy advance in solving the puzzle of why people

do not vote came over half a century ago when Anthony Downs (1955) demonstrated that

abstention was actually the rational choice when confronted with the question to vote or

not vote from a pure cost-benefit perspective.   From Downs' pivotal work on voting, a

scholarship has developed in political science that looks at voting as something people

choose to do as a democratic citizen, rather than something they must do (like, say,

paying taxes). Seeing voting as a general collective action problem (Olson 1965), the

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[1] Downs introduced this concept in 1955; since then, dozens more have grappled with it. For signal
examples, see Riker & Ordeshook 1973; Green & Shapiro 1994; Verba, Schlozman, & Brady 1995,
Rosenstone & Wolfinger 1978, Wolfinger & Rosenstone 1980, Rosenstone & Hansen 1993, and many
more.
[2] Alternative means of voting, including early voting and absentee voting, have increasingly been embraced
by registrars and electorates. However, in most of the United States, traditional Election Day balloting is
still the most common type of participation in an election.

marginal benefits of voting is often perceived to be lower than the costs in engaging in act of voting.[3]

Nonetheless, many people do vote, and the discipline shifted from treating voter turnout as a puzzle – "Why don't people vote like we expect them to?" – to a paradox – "Why do people vote despite the fact that they shouldn't?" The answer is, people have myriad of other motivations to vote besides just the vanishingly small possibility of casting the decisive vote. These include, just to name a few, a sense of duty, inculcated as discussed above; an expressive benefit, from consummating one's support of a favored candidate; the actions of campaigns and mobilization organizations; a social benefit, from gathering with friends for a communal activity; from being seen as a "good citizen;" any number of possible side benefits (discounts for consumer goods and the like); et cetera.

These motivations and a person's receptivity to them are distributed unevenly throughout the population. Some people have a keener sense of duty or more social connections than others. The benefits one might derive from voting are an individual-level trait. Further, since one makes their choice to participate by comparing one's perceived benefits to the extra effort required in casting a ballot, cost is also an individual function.

On some dimensions, this cost is easy to measure. Someone who lives one mile from their polling place has twice the transportation cost as another person who lives one-half mile from the polls. Information costs are harder to measure: Does one have any knowledge of the campaigns or the offices being contested? Does one know where the poll is? Does one know if s/he is registered (e.g. Brady and McNulty 2011)? While

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[3] Not all embrace the rational choice paradox; for alternate views, see Ferejohn and Fiorina (1974) and Niemi 1976.

these are invisible to the researcher, under most conditions they are certainly known to the citizen, and how these conditions compete with a citizen's political interest shall determine his/her intent to participate. But the citizen makes these calculations inside her head and without formally maximizing her utility, but behaving in a satisficing manner (Simon 1947); hence, this is tremendously difficult to measure in a quantifiable way because it is not directly observable to the researcher.

We can, however, measure these costs *relative* to each other. By observing comparable citizens differing in one key respect, we may see the effect of one key factor. With pure random assignment, this would be the experimental method; this permits us to attribute all the causal variation to the variable of interest, since all else is statistically equivalent according to the law of large numbers. Absent that, we treat the comparison as quasi-experimental; we must control for other potential causal variables and be more cautious with our causal claims.

A person's propensity to vote is directly related to the costs involved. People vote more often when registration is easier (Rosenstone & Wolfinger 1978, Wolfinger & Rosenstone 1980, Squire et al 1987), and when more alternatives such as early voting or absentee voting are available (Stein and Vonnahme 2008, Stein 1998), when technology improvements lower barriers (Allers and Kooreman 2009), when polls are closer to one's residence. (Haspel and Knotts 2005, Brady and McNulty 2011), and when meaningful penalties for abstention outweigh the logistical costs (Panagopoulos 2008). All these results suggest that sufficient costs can deter (or encourage) participation.

II. Quasi-experimental Manipulation and Hypothesis

This paper shall analyze a very specific aspect of the cost of voting in the American system – the ability to legally drive oneself to the polling station. We are interested in the effect being constrained from driving has on those accustomed to driving themselves.

In recent decades, states have begun to treat the offense "driving while intoxicated"[4] as a serious felony, with ample justification – the danger is real, and statistics show that automobile fatalities have declined drastically since governments started cracking down on this offense. However, it is more common for what one might call "otherwise law-abiding citizens" to violate this class of laws. Hence, the danger to society is relatively minimal when these individuals are not behind the wheel and/or altered on a controlled substance.[5] Depending on the state, first-time offenders for all but the most serious cases (vehicular manslaughter, for example) are rarely incarcerated for more than a nominal amount of time. Since the clear and present danger these individuals present is behind the wheel, the initial remedy is a suspension of their license to drive.

These are not the only instances that result in license suspensions. The state will suspend driver's licenses for improper operation without any impairment, such as frequent or severe speeding violations or other reckless operation of a vehicle. Surprisingly, the most common reason cited by the New York State Department of Motor

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[4] Generally alcohol is the offending substance, although any substance that impairs judgment or reflexes may be considered an intoxicant and exposes one to criminal liability.
[5] Relatively minimal compared to most other felonies; driving while intoxicated is a terribly reckless act that we do not mean to downplay.

Vehicles of suspension involves failures to pay fines, respond to summonses, or maintain proper insurance. These are individuals who may be somewhat less atypical of the general population than substance abusers, although we would speculate that they will still be distinct.

[Table 1 Here]

While the above may be somewhat misleading, in that a drunk driver also might not maintain insurance coverage or pay fines or penalties–indeed, the data show that concurrent suspensions for related offenses are very frequent–it seems as if many license suspensions may be triggered by sins of omission. One may have her license suspended for failing to pay parking tickets, or bouncing a check to pay one's insurance premium, or just having a heavy foot and a run of bad luck.[6]

Specifically, in analyzing the voter registration and driver suspensions of four counties in New York, we suggest that losing the ability to drive creates a high enough obstacle to voting that it becomes too costly for some registered voters to overcome. Comparing the subsample of those registered voters who lost the ability to drive legally in a period including the date of the 2008 general election, November 4, 2008, to those who had their license suspended before or after but not on, November 4, 2008, we find that such registrants are those who lost their licenses at other times before the election (controlling for other relevant variables). In this process, we look at an increased cost of

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[6] To cite one somewhat famous case, late-night host David Letterman lost his license in 1989 for repeated speeding violations between his Connecticut home and New York City.

voting via a very salient mechanism, self-transport, and discover this mechanism causes

voter abstention to a degree that is quantifiable and significantly large.

We must further note that this segment of voters is less likely to vote than the full

population of registered voters; they are younger, likely poorer and less educated, and

they are maladapted sufficiently to have committed some offense (and been caught at it)

as to lose their license for some length of time. Specifically, the population of license

suspendees includes people who have been caught committing reckless acts with a motor

vehicle, and/or have displayed irresponsibility if not contempt in their failure to follow

court edicts or insurance laws. This population must be considered different in kind from

the general population: less responsible, more risk-acceptant, et cetera. They are also

much more likely to be habitual substance abusers, with all the social and physical

pathologies that accompany that. This is a non-random draw of the population. Still, one

might imagine that they are not so aberrant relative to the general population that their

behavior when incurring increased obstacles to voting would not be substantively similar.

III. The Data

We have acquired voting history for four counties in upstate New York, and compiled

that data with motor vehicle records showing the periods when people had their licenses

suspended, and why.[7] The data were acquired through a Freedom of Information Act

request to the New York State Department of Motor Vehicles. We matched the voting

and suspension records by assuming individuals with the same first name, last name,

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[7] In addition to the data on license suspensions, we received addresses and birthdays of the suspendees for the purposes of matching the DMV records with the voter history records.

birthday, and zip code were the same person.[8] This created a unique entry for all voters in the four counties.

These are data on registrants of four upstate New York counties: three counties in the greater Binghamton area (Broome, Chenango, and Tioga), and Rensselaer County in the greater Albany area (Troy is the biggest city), who had their licenses suspended effective January 1, 2005 through May 31, 2009. The organization of these data, however, was problematic–the vast preponderance of suspendees had multiple offenses, some merely duplicate, others of different types and severity. The initial version of the data set was organized by the person's name, address, conviction type, and suspension date. Consequently, if a person with one conviction moved at all during the data, then they would be listed for each address. If a person with multiple suspensions moved multiple times, then it created a suspensions-by-addresses number of entries for that person. To limit duplications, we assumed that unique individuals (name, birthday, zip code) who faced the same conviction type and effective start date for their suspension were identical observations, effectively eliminating 140,574 over counts of suspended licenses. The data was transformed from individual-suspensions observations, to individual observations with multiple possible suspensions in the data.

Using this newly formed version of the data, we matched it with the registration data. This gave us 245,643 cases in a master database of 109,056,612 individual data points. 9,120 individuals in that data had received a driver's license suspension. We then removed five suspendees too young to participate, because they turned eighteen after Election Day. We also pulled out Absentee Voters; while relative to many states with more progressive voting traditions the numbers are very low, New York still has a

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[8] This only affected 22 unique cases, which collapsed to 11 people.

smattering of absentee ballots cast; 153 in the four counties, among the people with license suspensions, leaving 8,962 people.

The data provide us some useful covariates that have a well-established relationship with voting. We have data on whether registrants voted in the previous presidential election in 2004, which is one of the strongest predictors. Age has a famously curvilinear relationship with voting, increasing as years accrue until one reaches late retirement age; so we include age and age-squared to capture trends at both extremes.[9] People registered in one of the two major American parties are known to vote at higher rates, and people declining to register in a party are treated differently than third party registrants, the excluded category. Gender is generally not included here, but we find in this case that being male makes one less likely to vote to statistical significance. Gender is also a factor in that males are much more likely to have their licenses suspended than women, and the suspensions tend to be longer.

IV. Testing the Hypotheses

Our primary hypothesis is concerned with the suspensions of licenses during an election period. Consequently, our initial test of the hypothesis is limited to the 8,962 individuals who have had their license suspended at any point in the data. This effectively limits the data to a similar class of individuals (those who face license suspensions) and allows us to test to see if there is a difference between the timing of that

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[9] There were 893 cases where the registrant was listed as being born in 1850. This is obviously wrong; one presumes it was used as a default for registrations where the birth date of the voter was unknown. None of these registrants had a suspended license (*old enough to know better?*), so we only need to filter these voters while looking at the full dataset.

suspension and the probability that an individual votes. Using this sub-sample of registered voter, we estimate the prospects of an individual voting using a logit model with robust standard errors. Table 2 presents our initial estimations.

[Table 2 About Here]

These results are clear: A suspended license during an election sufficiently reduces the likelihood of voting relative to similar people who had their license suspended before or afterwards. The control variables are significant and in generally expected directions. Previously voting in the 2004 general election is positively associated with voting in the 2008 election; this is also the single best predictor of voting in our model. Those who are registered with a major party or a third party are more likely to vote than those who are not registered with any party. Older voters are generally more likely to vote than younger voters (with curvilinear effects at both tails) and women are more likely to vote than men in the four counties we have observed.

[Table 3 About Here]

The model we estimate uses a link function that employs a logged-odds ratio and the coefficients are not directly interpretable as changes in probability. Consequently, we provide Table 3 as a sample of the changes in probability for changes in the categories we are interested in. With the variables held at their various modes and means, the probability of a registered voter who has their license suspended at any point from 2005

to 2009, is roughly 58%. There is nearly a 20% decrease in the likelihood of voting if the person had their license suspended during the 2008 election. Other changes in the binary variables are reported as well as a standard deviation change (12 years) for age in both directions for comparative inference.

[Table 4 About Here]

Naturally, our data contains information for all registered voters in the four counties we have data for. As such, even given the caveats we have offered above about comparing the subsamples to the general population, we can test our hypotheses about the costs of voting on the larger sample as a robustness check on our initial model. The variables we include for the general model are the same as the previous model, except that we also include an indicator for individuals who had their license suspended at periods other than the 2008 election. As Table 4 indicates, having a license suspension at any period is correlated with a lower turnout rate than those who do not have a suspension in the observed time period. However, the magnitude for license suspensions during the 2008 election is more than 275% larger than suspensions during other periods.

V. Conclusions

There is more to be done with these data. We have been careful to point out that the subgroup of people with license suspensions is not comparable to the general population. However, there is a lot of variation within the subgroup. A quick measure of

that could be the number of days one has her license suspended for one or more infractions. These can range from literally less than one (an example of this is someone who failed to show proof of insurance and then returned with it later that day, or who goes to the bank to get money to pay a fine) to someone that loses their the rest of their lives, for repeated DUIs or vehicular manslaughter, etc. One would expect, in general, that the former would behave more like the general population than the latter.

The Days of Suspension variable, as a proxy for severity of the offense(s), is stymied to some degree by right censoring.   Our data set ends on May 31, 2009, so there was no defined end date for any suspension in place beyond that date. We had a few different remedies we considered to alleviate this right censoring. We could ignore suspensions that had not finished yet in their severity, but that would inevitably generate biases around zero-day infractions as all non-suspended individuals are assumed to have a severity of zero. We could listwise delete observations with the missing data, and systemically bias our data against the severest suspensions (and any suspensions that lasted for seven months or longer at the time of the 2008 election). Finally, we could impute the final date of data collection (May 31st, 2009) as the end date for suspension, and prematurely reduce suspensions that lasted beyond this time frame. We opted for the latter avenue as the other two routes are more problematic in terms of estimation bias and, if anything, it would make the Number of Days measure biased *against* our expectation time frame (we expect it to be negative, by truncating lengthier suspensions, we are making some suspensions much shorter than their true length).[10]

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[10] We also estimated the models using listwise deletion methods and the results remained statistically significant and in the same direction with some expected variation in the magnitude of the variables.

This measure of the severity of the offense(s) provides results that support the hypothesis that there is a large pocket of normalcy in the population of suspendees.

FIGURE 1 and TABLE 5 ABOUT HERE

As the data show, the number-of-days measure, suggests (a) that most license suspensions are quite short, (b) that there is a very long tail to the right for the most severe offenders, and (c), that the length of the suspension, absent from when it may have been, has a strong negative relationship with turnout. The strong suspicion here is that this theory can be refined by identifying the point when a difference in degree becomes a difference in kind, and thus find the sort of license suspendees, mostly on the far left of the distribution that may be reasonably comparable with the general population (versus those that are distinctively maladapted).

Measuring differences in time against a point-in-time dependent variable produces misleading results, however. Adverse selection is at work here; a longer suspension is more likely to include a given date (like Election Day) than a shorter one. The theoretical expectation is that people with longer sentences will be less likely to vote than people with shorter ones who have been convicted of committing less serious offenses that reveal less differentiation from the law-abiding population. So it is a biased estimator that will exaggerate its true predictive power; other means must be found to accurately distinguish between subgroups in the population of drivers with suspended privileges to earn fuller confidence in the results. In future work, we shall produce a more careful, qualitative breakdown of the behavior of suspendees in different categories.

We shall look not just at the length of the suspension, but the different offenses that led to the loss of driving privileges.   We shall examine this population in segments, comparing repeat offenders to first time offenders, chronic speeders to substance abusers to child support scofflaws, toward creating a full taxonomy of the tendencies of each subgroup.

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Table 1: Reason for Suspension of Driver's Licenses in New York State

Reason for Suspension	Percentage (from 1/1/2005 through 5/31/2009)
Alcohol or Drug related offense	17.3%
Speeding or Reckless Driving	3.8%
Failure to pay fines or penalties	27.3%
Failure to answer court summons	30.3%
Failure to maintain insurance coverage	12.1%
Other/Miscellaneous	9.8%

Source: NYS DMV – groupings done by authors.

Table 2: Logit Models Estimating the Likelihood an Individual, who has had their License Suspended, Voted in the 2008 Election.

Variable	Coefficient	Standard Error
Suspended 11/4/2008	-0.453***	(.051)
Voted in 2004	1.162***	(.055)
Male	-0.215***	(.049)
Major Party	0.459***	(.067)
No Party	-0.178**	(.073)
Age (Years)	0.027**	(.009)
Age^2	-2.0×10^{-4}**	(1.2×10^{-4})
Constant	-0.190	(.192)
n	8962	
X^2 (7)	883.614	

Robust Standard Errors. Single-tailed test for Suspensions, other variables use a two-tailed test. *$p < .1$, **$p < .05$, *** $p < .001$.

Table 3: Predicted Probabilities from the First Model.

| Variable	Starting Value	Change to	Changed Probability	Percent Change
Suspended 11/4/2008	0	1	46.96%	-19.38%
Voted in 2004	0	1	81.73%	40.29%
Male	1	0	63.35%	8.75%
Major Party	0	1	72.54%	24.53%
No Party	0	1	62.46%	-7.21%
Age (Years)	34	46	60.11%	3.19%
Age (Years)	34	22	43.51%	-25.31%

Initial estimates hold the other variables at their mode or means (age, age squared). The base probability of a registered, 34 year old male registered with a minor party voting in the 2008 election is 58.26%. Changes in age represent a single standard deviation above and below the mean of age. Percent change is calculated as the difference in the probability divided by the base probability (58.26%).

Table 4: Logit Models Estimating the Likelihood an Individual in the Four Counties Voted in the 2008 Election.

Variable	Coefficient	Standard Error
Suspended 11/4/2008	-0.747***	(0.045)
Suspended (Other)	-0.269***	(0.030)
Voted in 2004	2.042***	(0.014)
Male	-0.117***	(0.012)
Major Party	0.499***	(0.019)
No Party	-0.105***	(0.073)
Age (Years)	.0018***	(0.002)
Age^2	-1.78×10^{-4}***	(1.7×10^{-5})
Constant	-0.25	(0.41)
n	244726	
X^2 (8)	35775.346	

Robust Standard Errors. Single-tailed test for Suspensions, other variables use a two-tailed test. *$p < .1$, **$p < .05$, *** $p < .001$.

FIGURE 1

Histogram

Mean = 479.84
Std. Dev. = 767.357
N = 8,952
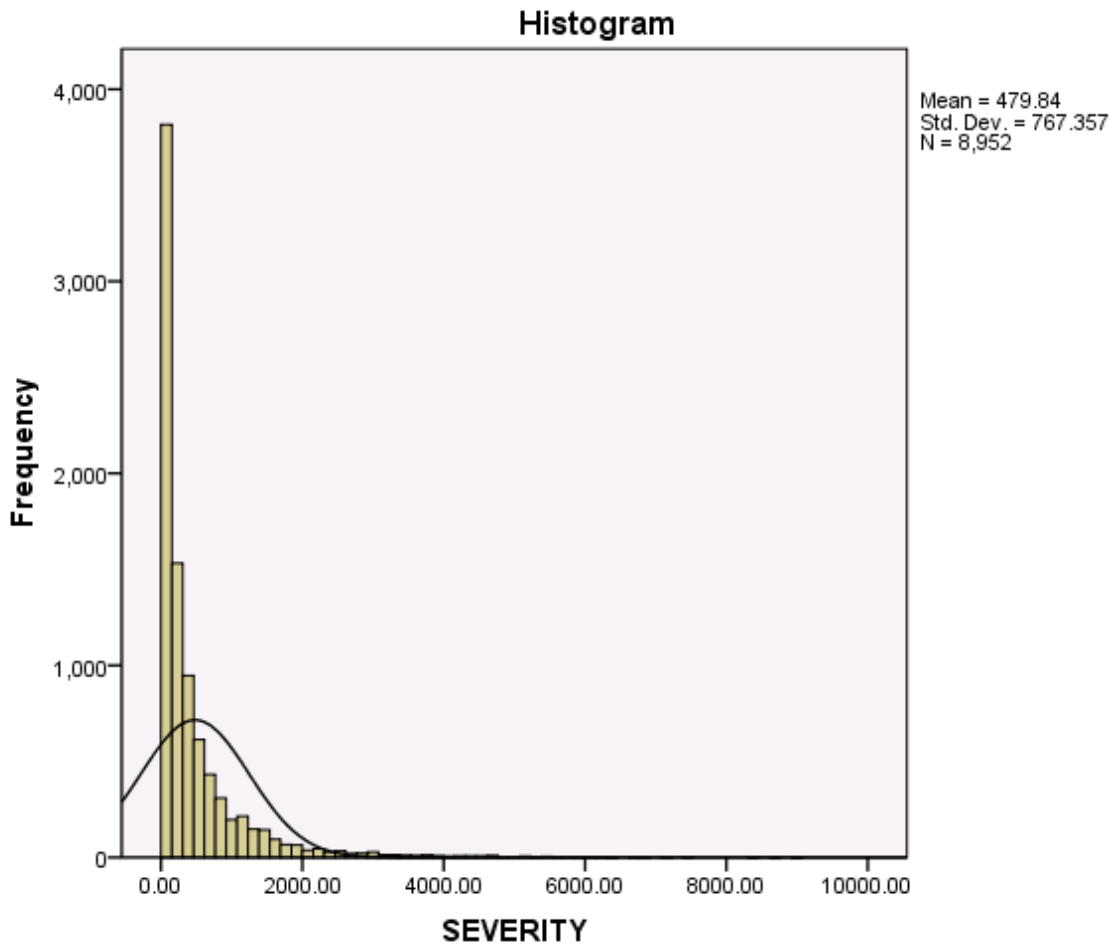
Table 5: Logit Models Estimating the Likelihood an Individual in the Four Counties Voted in the 2008 Election.

Variable	Coefficient	Standard Error
Days of Suspension	-1.35×10^{-4}***	(3.1×10^{-5})
Voted in 2004	1.156***	(0.055)
Male	-0.207***	(0.048)
Major Party	0.466***	(0.067)
No Party	-0.168**	(0.073)
Age (Years)	0.029**	(0.009)
Age^2	-2.84×10^{-4}**	(1.22×10^{-4})
Constant	-0.303	(0.191)
n	8952	
X^2 (7)	728.68	

Robust Standard Errors. Single-tailed test for Days of Suspension, other variables use a two-tailed test. *p < .1, **p < .05, *** p < .001.