"Dodging Up" to College or "Dodging Down" to Jail:

Behavioral Responses to the Vietnam Draft by Race and Class

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Abstract: The Vietnam draft generally excluded the tails of the socio-economic status distribution through the use of qualifying criteria (e.g., a minimal IQ score, a relatively clean criminal record) and college deferments. I present a simple model in which high-SES men "dodge up" (gain a deferment by investing in human capital) and low-SES men "dodge down" (appear unfit for service by disinvesting). Drawing on a little-used dataset of draft-aged men from the Vietnam period, I find that six months after receiving a "bad" 1969 lottery number, blacks and low-SES men report higher rates of delinquent behavior than do their counter-parts with "good" numbers, whereas whites and higher-SES enroll in college at higher rates than do their counter-parts with "good" numbers. Moreover, in administrative data from Georgia, men with bad numbers are overrepresented in prison admissions in the twelve months following the 1972 lottery.

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"It's better in jail, watching television, fed / Than in Vietnam somewhere. Dead."
- Muhammad Ali, 1967

U.S. military drafts have rarely drawn from the entire socio-economic status distribution. Although Congress banned the use of "commutation fees" (whereby men could pay $300 to avoid serving in the Union Army) in 1864, throughout the 20th century men from privileged backgrounds could often find ways to avoid service through educational deferments. Less privileged men, however, could often only avoid service by convincing military officials of their mental, moral or physical inadequacy.

I model how such selection criteria could result in increased variance in human capital investments. The draft encourages already advantaged men in the right tail of the distribution to "dodge up" – increase human capital investments so as to attain student deferments. Conversely, it encourages less privileged men in the left tail to "dodge down" – disinvest in human capital so as to appear unfit for service.

I then test the model in the context of the Vietnam draft. The key empirical challenge is separating the effect of draft-avoidance behavior and actual military service, as any increase in the probability of the latter (e.g., a "bad" draft lottery number) directly increases the former. To address this simultaneity problem, I often use the draft lottery (as in Angrist 1990) but focus on outcomes immediately following the lottery, so that any effect of, say, a bad number could not be due to actual service. I also make special use of the February 1972 lottery, originally meant to determine 1973 call-ups but rendered moot in January 1973 when an all-volunteer force replaced the draft.[1]

[1] Angrist (1991) shows that 1972 lottery numbers are still predictive of military service the following year. Some men with bad lottery numbers preferred to volunteer instead of waiting to be drafted because volunteering could sometimes lead to better assignment

I find support for the model from a variety of sources. CPS data indicate that the relative increase in male enrollment during the war found in past research (e.g., Card and Lemieux 2001) holds only for whites. In fact, data from a little-used longitudinal survey of draft-age men from the period suggest that whereas white and high-SES young men react to "bad" draft lottery numbers by enrolling in college in the following six months, black and low-SES young men react by engaging in delinquent behavior. Moreover, using administrative data from Georgia, I find that men with bad numbers are over-represented among prison admissions in the twelve months following the announcement of the 1972 draft lottery numbers.

The above results may help to broaden our understanding of the legacy of the Vietnam War. Whether through direct effects of military service on future wages (Angrist 1990) or through draft-avoidance behavior, the war appears to have significantly shaped the lives of many of the 26 million men of this cohort: the 2.6 million who served in South Vietnam (1 – 1.6 million in combat or "close combat support") and the 6.4 million who performed non-combat duty elsewhere (often on U.S. soil), but also the vast majority of non-veterans. Given the relatively small share of men who served in Vietnam as well as survey data suggesting that most men who did not serve in combat took explicit steps to avoid doing so, avoidance behavior – whether dodging "up" or "down" – may well have been a powerful social phenomenon for this generation.[2]

(though also required a three-year tour of duty instead of draftees' two-year tours) However, as I argue in Section 5, any such draft-induced volunteering would bias estimates against finding my results.

[2] Baskir and Strauss (1978) report that over 60% of men who did not serve in combat admitted to taking explicit steps to decrease their likelihood of doing so. They base the claim on a 1975 survey of 1,586 men from Washington, D.C., South Bend, Indiana, and Ann Arbor, Michigan, known as the Notre Dame Survey of the Vietnam Generation. This

The dodging down effects I find might also contribute to a long-standing and heated debate among social scientists – why the outcomes of African-American young men started to suddenly and unexpectedly deteriorate around 1965. On the one hand, critics such as Charles Murray claim that Great Society welfare programs created large and immediate incentives against work, education and marriage. William Julius Wilson, on the other hand, cites the loss of low-skill jobs during this period, especially from cities, and argues that the coincident timing of the deterioration of blacks' outcomes and Great Society reforms is a mere red herring. My results suggest that for many black young men the Vietnam draft dramatically decreased the perceived opportunity cost of delinquent behavior, which may have created fertile ground for the riots, marginal labor-force attachment and even out-of-wedlock childbirth that characterized black communities during this period and that marked the end of the slow but steady improvement in socio-economic status blacks had enjoyed since World War II.

Section 1 provides a short history of the Vietnam Draft and specifically the resistance to the War among blacks and low-SES men. Section 2 presents a simple framework to illustrate how a draft can lead to the well-off "dodging up" and the less privileged "dodging down." Section 3 describes the main data sources. Section 4 provides empirical evidence suggesting that the "dodging up" behavior past research has identified does not apply to under-privileged young men. Section 5 makes the stronger claim that such groups actually engaged in "dodging down" behavior. Section 6 concludes.

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percent would appear to be a lower bound on the number of surveyed men who made decisions in part based on the draft (e.g., others may have reacted subconsciously to, say, the perceived shortening of time horizons).

Section 1: The Vietnam Draft

The only time the US relied on a sustained military draft during the 20th century was between 1940 and 1973. During this period, all men registered after their 18th birthday and soon after filled out a draft questionnaire and later reported for examination. Local draft boards would use this information to determine individuals' draft classification, the most common being I-A (ready for duty), II-S (student deferment), III-A (hardship deferment), IV-F (unfit for service). Each month local boards were asked to fill quotas based on the military's needs, and if not enough volunteers were found, they had the power to draft anyone from the pool of 18-26 year-old I-A men.

Policymakers maintained the draft after hostilities ended in World War II not only for reasons of military-readiness but also in an effort to direct manpower to their most productive use during the Cold War, a process known as "channeling." General Lewis Hershey, director of the Selective Service from 1941 – 1970, described channeling as "developing more effective human beings in the national interest" by deciding "whether a young man is more valuable as a father or a student or a scientist or a doctor than as a soldier" (Baskir and Strauss 1978, p. 22). Local draft boards granted explicit deferments for education and essential occupations to prevent the "best and brightest" from being killed off in combat.

For much of this period, the draft was not a highly controversial institution: quotas were very low, deferments and exemptions were handed out liberally, and being drafted rarely led to any combat duty. Indeed, low quotas during the 15 years following Korea made possible high physical, mental and moral standards and led in part to the

famous study "One-third of a Nation" showing that one-third of 18-year-old men were unfit for service in 1964.[3]

During the Vietnam War, of course, quotas shot up, draft boards became stingy with deferments and service suddenly entailed serious risk of death or injury. In 1969, Congress required draft boards to fill 1970 quotas by order of lottery numbers, based on an annual, televised drawing in which birthdates were randomly drawn from an urn (see Appendix Table 1). By the end of 1970, for example, call-ups had reached up to men with number 195.[4] The cut-offs, of course, were determined ex-post, based on the needs of the military in the year following a given lottery, so ex-ante men did not know above which lottery number would turn out to be "safe," especially for the 1969 lottery in which no previous cut-offs existed and at which point the direction of the war remained unclear.

Even with the lottery system, boards retained the power to determine classifications, so a young man with a bad lottery number could still avoid service if the board granted him, say, a student deferment. Similarly, a man with a bad lottery number could still be rejected due to a mental, physical or moral defect, although in 1966 the mental-aptitude requirements were drastically lowered.[5]

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[3] See President's Task-Force on Manpower Conservation (1964).

[4] In 1971, those with 1970 numbers below 125 were called up; in 1972, those with 1971 numbers below 95 were called up; in 1973 no call-ups were made as the all-volunteer force replaced the draft, rendering the 1972 numbers essentially moot.

[5] Before 1966, only men who were above the 30th nationally normed percentile of Armed-forces Qualifying Test (AFQT) score (in Groups I, II or III, in military parlance) were eligible to serve. In 1966, Secretary of Defense Robert McNamara launched "Project 100,000," which made Group IV men (between the 10th and 30th percentile) eligible for military service. Since the adoption of the AFQT in 1950, Group V men (9th percentile or lower) have been prohibited from service.

Resistance to the draft

It is not obvious a priori that blacks or low-SES men would be so hostile to the War that they would choose to "dodge down." First, as suggested in Angrist (1990), receiving a bad lottery number was not associated with diminished labor-market outcomes for blacks and may have in fact led to educational gains through the GI bill (Angrist and Chen 2008). Second, popular press accounts of the resistance movement often stressed its elite, well-educated leadership and its occasional conflicts with working-class supporters of the War (Foley, 2007).

However, data from the period undermines the stereotype of the upper-class anti-war agitator and working-class pro-war patriot. First, while being lotteried into the draft in the 1970s may not have had negative consequences for the average black soldier *ex post*, the *ex ante expectation* determines draft-avoidance behavior; based on the experience of black soldiers in the 1960s, that expectation was unlikely to be positive.

In 1966 the Pentagon admitted that blacks made up over 18% of deaths in Vietnam, even though they made up only 13% of combat forces, consistent with my own analysis of death records from the National Archives' Combat-Area Casualty Current File (CACCF). The racial disparity conditional on military service in general is far worse, as relatively safe military assignments were not always accessible to blacks (e.g., through the conflict blacks never made up more than 1.3% of the Army and Air National Guard). My back-of-the-envelope calculations suggest that in 1966 blacks faced a death rate conditional on enlistment 2.72 times that of whites.[6] Only because of a concerted

[6] In the 1970 census, blacks (whites) account for 7.43 (91.66) percent of all 24 year-old "Vietnam-era veterans," which I use as a proxy for having served in the military in 1966.

effort later in the War to combat the appearance of discrimination did overall white casualty rates start to approach those of blacks.[7]

Although high death rates for a group does not preclude its support for a conflict, survey data indicate that the war lost support early among blacks and the working class.[8] In 1966 the National Opinion Research Center (NORC) conducted a survey on attitudes toward the War. Table 1 presents results from simple regressions that relate attitudes toward different policy options to demographic and socio-economic characteristics.

Blacks are significantly less likely to take hawkish positions on the war ("continuing the fighting even if several hundred U.S. troops are lost each week") and more likely to favor ending the conflict ("gradually withdrawing to let the Vietnamese work out something on their own" or "withdrawing even if the communists take over South Vietnam"). Conversely, higher education and social class predict more hawkish attitudes.[9] Indeed, as early as 1966 (two years before the Tet Offensive, three years

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[7] See discussions in Baskir and Straus (1978) and Graham (2003). In my own analysis of the raw death files from the National Archives (the Combat-Area Casualty Current File), black over-representation seems to peak in 1965 and 1966, and falls to below the black share of combat personnel in 1970.

[8] In fact, after the publication of the Pentagon report, many established civil rights leaders continued to support the War in the hopes that military service abroad might lead to civil-rights gains at home. Vietnam would come to divide the civil-rights establishment. The director of the Congress of Racial Equality condemned the War and claimed that their position, and not that of the civil-rights establishment, represented the vast majority of blacks: "There has been widespread frustration and anger toward the war, toward the extension of the war, and toward the high proportion of Negro losses in the war…A small minority of civil rights leaders [who opposed the war] could very well mean a majority of black people" (NYT, 1966).

[9] I only display multivariate regression results because given the high correlation between racial and social classes the results suggest very significant, distinct and consistent effects along different dimensions of socio-economic status even after controlling for age, sex and region; however readers should note that the positive correlation between support for the war increasing and socio-economic status is readily apparent in simple cross-tabulations.

before news of the My Lai Massacre broke, and four years before Kent State) less than 38% of *whites* without a high-school degree approved continuing despite high casualties and over 43% favored a gradual withdrawal (as opposed to 51% and 37%, respectively, for those with at least a high-school degree). In short, their feelings on the war's merits would seem to present black and working class men few second thoughts about the "dodging down" strategy modeled in the next section.

Section 2: Model

Individuals have identical utility functions strictly positive and convex in consumption C and leisure L and at the age of 18 decide how much to invest in human capital k, which decreases leisure but increases (future) consumption. I take a very broad view of "leisure" as merely the opposite of investment. For example, going to college would decrease L, increase k and increase C; but so would incurring the upfront psychic cost of, say, abstaining from alcohol or drug use, criminal activity, or other nonproductive activity that might, all else equal, constitute a form of "leisure" or "fun" for a teenage boy.

Individual differ only in w, their socio-economic background, innate ability or anything that increases the relative consumption return to k, or, equivalently, the opportunity cost of leisure. For example, a low-w youth during this period would likely face a lower opportunity cost of criminal behavior than his high-w counter-part – a criminal record would have carried less stigma costs in the inner city due to the dramatic rise in urban crime rates in the 1960s than in the white suburbs where it would still represent a mark of extreme deviancy. Similarly, the opportunity cost of college tuition

in terms of consumption would be higher for the low-w type who has to pay his own way (or would be infinite, if he lacks the educational background to get into college) than the high-w type whose parents foot the bill.

Assuming that c = wk and that L = -k gives the standard indifference-curve-budget-constraint set-up depicted in Figure 1, panel A. Individuals choose k* (the optimal investment without the draft) such that the indifference curve with respect to consumption and leisure at that point is tangent to the budget constraint.

Investment with a conscription tax

I model the draft as a lump-sum tax on consumption. In line with the "channeling" philosophy described in the previous section, I limit this tax to those who choose investment k below k^H and above k^L, where $k^H > k^L$. Those who choose investment under the draft $k^D \geq k^H$ will be granted a student or occupational deferment and not be subject to the tax; those who choose $k^D \leq k^L$ will not meet the moral, mental or physical standards required of military service and will also escape the tax.

Panels B and C of Figure 1 depict the new optimization problem and illustrate several points. First, the draft does not affect those with k* above k^H or below k^L. Second, for many values of w, choosing the corner solutions of k^H ("dodging up") or k^L ("dodging down") is preferred to choosing either the no-draft k* or any other k in (k^L, k^H).

Moreover, making even small assumptions about the utility function generates predictions about who will dodge up and who will dodge down:

Proposition. Let k_i* be the optimal choice of k for person i with wage w_i without a draft and k_iD the optimal choice with a draft. For all utility functions homogeneous of degree one, if i with wi chooses $k_i^D > k_i^*$ and j has $w_j > w_i$, then j will also choose $k_j^D > k_j^*$. Conversely, if j chooses $k_j^D < k_j^*$, then i will also choose $k_i^D < k_i^*$.

Proof: Appendix

Therefore, for a large class of utility functions, if someone "dodges up" ("dodges down") when everyone with a higher (lesser) initial endowment will also "dodge up" ("dodge down").

The remainder of the paper will present evidence in support of the proposition. Obviously, such evidence only fails to reject the model and does not in fact confirm it. For example, low-SES men might lower their human capital investments during a draft because the perceived risk of death or injury in combat shortens the expected time horizon over which the returns to such investments could accrue. The main insight still holds: a draft causes high-SES men to "dodge up" and low-SES men to "dodge down," though "dodge" unfortunately implies a stronger strategic motive than many low-SES young men may have had. With respect to the draft's role in potentially explaining social phenomena among the urban "underclass" in the late 1960s, the distinction in the micro-foundations behind the result would not seem to matter.

Section 3: Data and empirical challenges

I rely heavily on a little-used longitudinal dataset of young men born mostly in 1950 and 1951 called "The Youth in Transition Project." The original aim of the study was to determine why young men dropped out of high school and it thus provides detailed data on educational outcomes as well as self-reported anti-social and delinquent behaviors. Furthermore, in 1969 the survey added a module on the Vietnam War as it was obvious by that point that the war and the draft would be seminal events in these men's transition to adulthood. Therefore, I have a wealth of questions on attitudes toward the war as well as the draft lottery numbers for many of the subjects. Summary statistics are given in Table 2.

Unfortunately, the dataset has a number of drawbacks. First, the sample is small and attrition significant, starting with 2213 subjects in 1966 and losing 18.8% by 1970 (the year on which I focus). The small after-attrition sample size is exacerbated by the fact that my identification strategy requires subjects to have December 1969 lottery numbers – which excludes the more than half the sample born in 1951 and thus subject instead to the 1970 lottery. This restriction leaves me with fewer than 500 observations. Comparing cols. (1) and (3) in Table 2 is somewhat heartening, however, as attrition does not appear to be a function of deprivation – the share of respondents who are black, have a mother who did not complete high school, or are in the lowest-SES decile does not fall from the first wave to the fourth.[10]

Second, col. (4) shows that with respect to race, mother's education, and IQ, the Transitions data oversamples boys from more well-off backgrounds than the general

[10] I base the SES measure on the survey's own measure of SES.

population, represented by the (weighted) National Longitudinal Survey of 1966, surprising given the original aim of the study. Combined with the small sample size and high attrition, this apparently skewed sampling leaves me with very few observations of black (col. 4) or low-SES (col. 5) young men.

Finally, the Transitions dataset follows a very unfortunate (for my purposes) skip pattern: for anyone already in military service by June of 1970, the interviewers did not ask lottery number or exact birthday. Thus, I am likely missing some individuals with "bad" lottery numbers who had already reported to duty; I next discuss the potential bias associated with such selection.

Estimation and potential biases

One of the main specifications used in the paper takes the following form:

(1) $$Y_i = \beta_0 + \beta_1 Lottery_i + \beta_2 Group_i + \beta_3 Lottery_i * Group_i + \beta_4 X_i + \varepsilon_i .$$

Yi is an outcome variable for person i such as college attendance or criminal activity, Lotteryi is the draft risk associated with person i's 1969 draft lottery number, Groupi is a dummy variable coded as one if i belongs to an under-privileged group (in practice, blacks or those from the bottom SES decile), and Xi is a vector of covariates. The coefficient on the interaction term indicates the extent to which bad lottery numbers have different effects on privileged versus underprivileged groups and is thus the key variable of interest in testing the model in Section 2.

The assumption that *Lottery* is random, a reasonable assumption when considering the entire population of men included in the 1969 lottery, allows consistent estimation of b1 and b3 even in the presence of omitted variables. But, as shown below,

the particular skip pattern used by the Transitions data (whereby birthday and lottery number are only asked of those men who as of June 1970 are not yet inducted in the armed forces), leads to selection bias into my final regression sample and thus compromises OLS estimation.

Consider the following latent variable model of induction into the armed services by June of 1970:

(2) $$p_i = \alpha + \beta N_i + \gamma Z_i + \varepsilon_i,$$

where pi is the latent variable, Ni is the 1969 lottery number of person i, and Zi is some unobserved characteristic that makes service less likely (family connections, on the one hand, or very low aptitude, on the other). As Lottery is random, its covariance with Z is zero. However, inclusion in my regression sample requires that someone not be inducted, that is, for some constant $\overline{p}$:

(3) $$p_i = \alpha + \beta N_i + \gamma Z_i + \varepsilon_i < \overline{p}, \text{ or,}$$

(4) $$\gamma Z_i < \overline{p} - \alpha - \varepsilon_i - \beta N_i.$$

rendering a negative covariance between N and Z.[11]

Intuitively, given that someone in my final sample has a low *N* they are likely to have a high Z, as *something* (e.g., parental connections, on the one hand; very low mental aptitude, on the other) allowed them to remain out of the armed services. Whether this unobserved characteristic suggests that an individual is among the "best and the brightest" or "the bottom of the barrel," it is likely to be correlated with many outcomes variables of interest and thus compromises estimation of (1).

[11] More formally, assuming that Z has a standard normal distribution gives:

$$Cov(Z,N) = E(ZN) - E(Z)E(N) = E(ZN) = E(nE(Z \mid N = n)) = E(n \int_{-\infty}^{\frac{\overline{p}-\alpha-\beta n}{\gamma}} Z\phi(Z)dZ) < E(n \int_{-\infty}^{\infty} Z\phi(Z)dZ) = E(N)E(Z) = 0$$

Is selection a major worry in practice?

Several piece of evidence suggest that the selection issues described above are limited. First, the distribution of the lottery numbers of men in my sample appears to be roughly uniform with mean 365/2 = 182.5, suggesting that few subjects with bad 1969 lottery numbers had joined the military by June of 1970 (and thus drop out of my regression sample). Figure 2 shows the distributions of lottery numbers for whites and blacks separately. Although the mean for blacks is slightly above the halfway point, one cannot reject the hypothesis that both have a mean of 182.5.[12]

Second, the right-hand-side variables in equation (1) do not predict earlier measures of either delinquency or aptitude and ability. I review these placebo tests in more detail in later sections, but note here that the lack of significance of both the main effects and the interaction terms suggests that not only do "the bottom of the barrel" or "the best and the brightest" scenarios not hold in general, but they do not hold for any of the particular subgroups I investigate.

In short, the extent to which people with bad lottery numbers fall out of my regression sample appears limited (essentially no selection for whites and small selection for blacks), but, more importantly, there appears to be little evidence that, conditional on being included in my final sample, a bad lottery number in 1969 predicts earlier measures of aptitude, ambition or anti-social behavior.

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[12] The mean and standard deviation of the distribution of lottery numbers from the entire sample essentially hits the expected values of U(1, 365) exactly. For blacks, the performance is not as impressive, but the mean (variance) is still in the 90% (95%) confidence interval in monte-carlo simulations. Note that even if births are seasonal, the randomization suggests that the distribution of *lottery numbers* should be roughly uniform.

Section 4: "Dodging up" results

CPS data

Card and Lemieux (2001) find that male-to-female enrollment rates unexpectedly spiked during the Vietnam War, breaking for several years from the strong downward trend exhibited from 1950 to the present. Using data from the CPS, I also find this effect (though I graph men and women's rates separately, instead of as a ratio, as they do), shown in panel A of Figure 3. However, in panels B and C I separate enrollment by race (the only cut of the aggregate data provided in the CPS) and find that the Card-Lemieux result is being driven almost entirely by whites. Black men do increase their enrollment during this period, but not more than do black women. If anything, black men appear only to increase their enrollment relative to women in the years immediately *after* the War, perhaps due to the Vietnam-era GI Bill and inline with evidence in Angrist and Chen (2008).[13]

Transitions data

To determine if individuals react to their lottery numbers in the manner predicted by the model and suggested by the CPS aggregate enrollment trends, I estimate equation (1) using as the dependent variable an indicator coded as one if the respondent answered "yes" when asked in June of 1970 if he was currently enrolled in college, and zero

[13] The CPS enrollment data does not specifically refer to college enrollment, though it is likely that 19-year-olds attending school are attending some type of post-secondary institution. Ideally I would prefer to use actual college enrollment, but, to the best of my knowledge, this CPS series provides the only consistent enrollment statistics by age, race and sex that go back before the start of the War.

otherwise. I normalize *Lottery* so that its mean is zero and the coefficient represents the effect of going from the "best" to the "worst" number.

The first two columns of Table 3 examine the differential effects of lottery numbers on blacks versus whites. Col. (1) shows that moving from the best to the worst lottery number increases the probability of enrolling in college by 30 percent points (or 55 percent given a baseline enrollment of 54 percent for this group). But the coefficient on the interaction term suggests that no such effect holds for blacks and in fact a bad lottery number may result in lower levels of college enrollment (though one cannot reject that the sum of $\beta 1$ and $\beta 2$ is zero). Col. (2) adds fixed effects for month of birth, SES deciles and freshman-year GPA with only minimal effect on the point estimates – a somewhat heartening result given the worries about selection.

The second two columns report the analogous results when low-SES men serve as the under-privileged group. Here, the effects are roughly similar – it appears that low-SES men "dodge up" more than do black men, though there is some very weak evidence (p-values of 0.249 and 0.375) that they are less likely to dodge up than their higher-SES counterparts, in support of the model.

As discussed in the previous section, selection into the regression sample is likely to be non-random with respect to the lottery number. The "bottom of the barrel" bias story suggests that men with "bad" numbers remain in my sample only because they have unobserved traits related to low ability or ambition, whereas the "best and the brightest" story suggests that only the most able are able to secure student deferments but in fact would have gone to college anyhow. In Table 4, I report the results from estimating Cols. (2) and (4) when IQ and 1966 college plans serve as the dependent variables.

Neither lottery number nor its interaction is even close to significant in any of the four regressions, and the sign of the point estimates vary in no particular pattern, suggesting minimal selection bias along these dimensions.

Section 5: "Dodging down" results

Transitions dataset

I use the same, simple econometric model to measure any "dodging down" effect in the Transitions data and merely replace the college-enrollment indicator on the left-hand-side of the equation with variables related to delinquency and negative psychological affect.

Table 5 shows results comparing the reactions of whites and blacks. Cols. (1) and (2) indicate that whites' delinquency does not depend on draft numbers, whereas that of blacks increases with draft risk, and that these results are relatively robust to adding GPA, SES-decile, and month-of-birth fixed effects. Cols. (3) – (6) show the same pattern for the severity of interpersonal aggression and theft/vandalism, with some weak evidence that whites decrease the former activity in response to a bad lottery number. Cols. (7) and (8) show strong effects for the physical manifestations of stress and depression (panic attacks, nausea, nightmares – see Table 2 for full description).

Table 6 reports the analogous results, but this time men below the 10th SES percentile serve as the underprivileged group. The point estimates have the same sign pattern as do those from the black-white comparison, but with less precision. Nonetheless, the positive coefficient on the interaction term is statistically significant for

interpersonal aggression, somatic symptoms, and (weakly) frequency of delinquent behavior.

A nice feature of the Transitions survey is that it asks boys for these self-reports each wave. In Table 7, I repeat the regressions in Tables 5 and 6 but use the *spring 1969* self-reports as the dependent variable. None of the coefficients on either the lottery number or its interaction terms is significant at even the 0.2 level. In short, while black and low-SES men report high levels of delinquency in the six months *after* they receive their "bad" lottery numbers, no such effect is apparent just six months *before* receipt of their numbers.

Georgia data

A remaining concern from the Transitions dataset is the self-reported nature of the "dodging down" measures. If bad lottery numbers for some reason made certain men more cognizant of their anti-social behaviors, then the results in Tables 4 and 5 could arise in the absence of any true behavioral effect.

To address the concerns related to subjectivity, I turn to administrative records from the Georgia Department of Corrections (GDC). The GDC manages an "inmate data file" that covers every inmate who served time in a state prison since the 1960s. This data set provides standard criminal-justice and demographic variables but, for the purposes of this study, its most important feature is its inclusion of exact birthdates.

The hypothesis I wish to test is whether people who received bad February 1972 lottery numbers reacted by increasing their criminal activity. Recall that 1972 call-ups were to be based on the 1972 lottery, but in January of 1973 an all-volunteer force

replaced the draft rendering the 1972 numbers moot. Thus, I consider all prisoners born in 1953 (the cohort to which the 1972 lottery applied) and look at prison admission rates in the twelve months following the lottery.[14]

I generate the total number of inmates admitted and the total number of inmates admitted within certain time spans (e.g., all inmates admitted in 1972) with each birth date. The unit of analysis is thus a birthday and my regressions generally have 365 observations.

Instead of reporting summary statistics (as there are no real covariates, there is little to report), I graph the average of the left-hand-side variable (count of admits for each day) on the y-axis for each 20-lottery-number bin on the x-axis in Figure 4. The most striking feature of the graph is that lottery numbers greater than about 150 do not predicts admissions at all. However, while noisy, lottery number and prison admissions appear to negatively correlate for numbers less than 150.

To more precisely quantify the relationship depicted in Figure 4, I estimate the following equation:

(5) $$Inmates_{ymd} = \alpha + \beta Lottery_{yd} + \mathbf{M}_m + \varepsilon_{ymd}$$

where $Inmates_{\text{ymd}}$ is the number of inmates admitted to prison who were born in year y, month m, and day d, *Lottery* is the lottery number for someone born on day d in year y (as before, shifted so as to have mean zero and scaled so that β represents the change associated with going from the best to the worst number), and **M** is a vector of month-of-

[14] I exclude February 1972 as the time between commission of a crime and admission into prison after conviction (as opposed to jail, where defendants await trial) is usually over a month. I include February of 1973 even though the end of the draft was announced in January for the same reason. But the results are not sensitive to the exact choice of month.

birth fixed effects. Note the absence of an interaction term, in contrast to equation (1). Having data from the universe of all draft-age prisoners and not all draft-age males, I cannot estimate the differential effects of bad lottery numbers on the incarceration rates of privileged and under-privileged men as I do with the Transitions data. Equation (5) implicitly investigates the universe of under-privileged young men (with the implicit assumption that more privileged men are not at the margin of criminal activity) and determines whether their likelihood of incarceration rises after receiving a bad number.

The first two columns of Table 6 show the results of estimating equation (5) using a negative-binomial and OLS model respectively. In both cases, there is a positive and significant coefficient on *Lottery*, suggesting that people with bad 1972 lottery numbers were over-represented in prison admissions in the twelve months following receipt of their numbers. The coefficient in col. (2) suggests that there are 0.462 (or 46%, given a baseline of 1.08) more prisoners whose birthdays correspond to the worst 1972 lottery number than whose birthdays correspond to the best number. Col. (3) shows the results (reported as changes in probability) from a probit estimation of whether any prisoners with birthday d were admitted. The probability that someone with the worst lottery number is admitted to prison is 22 percentage points (or 35%, given a baseline of 62.5%) higher than that for the best number. As a check, col. (4) shows that 1972 lottery numbers do not predict prison admissions in the years prior to the lottery.

As noted, the advantage of using the 1972 lottery numbers is that they were never used to determine call-ups. However, Angrist (1991) shows that men with bad lottery numbers often volunteered instead of waiting to be drafted, and finds in particular that 1972 numbers still weakly predict military service. However, such lottery-induced

enlistment would only bias estimates against finding my results because fewer men with low lottery numbers would have remained in the state and thus be at risk of admission to state prison.

Summary of "dodging down" results

In general, the results from Tables 4 – 6 suggest that for blacks and low-SES men, a bad lottery number is strongly associated with not only the frequency of delinquent behavior, but also its severity. The results lend significant support to the claim that draft risk leads less privileged men react in an apparently reckless or anti-social manner; however, whether they are deliberately trying to avoid service, rationally responding to a perception of shortened time horizon, or merely reacting to severe amounts of stress (Camerer, Lowenstein and Prelec 2005 review psychology studies that suggest strong strong affective states, such as those explored in Tables 4 and 5, may have significant, detrimental effects on decision-making) is unclear. Whether these young men were explicitly performing the optimization described in Section 2 or merely reacting to the anxiety, confusion, and danger associated with a bad draft number, they appeared to take steps that would diminish their human capital and future socio-economic status.

Section 6: Discussion and Conclusion

This paper has provided evidence from a variety of sources that the draft-avoidance behavior of men in the Vietnam cohort varied across race and socio-economic status. Engaging in human-capital intensive activities that would decrease the chance of being drafted ("dodging up") appears limited to those with greater opportunity. In

aggregate enrollment data from the CPS, draft-age white men dramatically increase their schooling relative to white women during the Vietnam era, whereas trends for black men and women move in lock-step. Similarly, bad lottery numbers increased the probability that a white student would enroll in college the following year, whereas bad numbers had no obvious effect on low-SES students and even a negative effect on black students.

Conversely, engaging in human-capital diminishing activities that would diminish the probability of being drafted ("dodging down") appears concentrated among the under-privileged. A bad lottery number increases self-reported delinquent behavior, negative psychological affect, and even health problems for blacks and low-SES young men, but not for others. Moreover, men with bad numbers in the 1972 lottery are overrepresented in prison admissions the following year, providing further support for "dodging down" hypothesis.

What do these results suggest about the role of the draft in the social transformations of the 1960s and 70s, especially for African Americans? As useful as the draft lotteries are in terms of econometric identification, the vast majority of the fighting and dying associated with the War took place before their introduction. Appendix Figure A1 shows the stock and flow of deaths each year of the conflict. Of the 58,000 service personnel killed in the war, only seven percent died after 1969.[15] Furthermore, men sent to Vietnam based on the lottery draw arrived during a period of far lower casualty rates and explicit efforts to decrease black casualty rates.

[15] Seven percent represents a very generous upper bound on the share of deaths attributable to lottery-induced selection as the vast majority of military personnel who died in Vietnam in 1970 had begun their service during the pre-lottery era (my calculations based on CACCF data).

Such evidence suggests that "dodging down" motives, especially for blacks, would have been even stronger in 1965-1968.[16] Interestingly, these years represent the peak years of the 1960s riots. Moreover, social indicators from labor-market attachment to out-of-wedlock birth all begin to deteriorate around 1965 or 1966 (Murray, 1994). Attributing all of these developments to draft-avoidance behavior would be unwise; but the draft appears to have significantly lowered the perceived opportunity cost of engaging in such activities during a formative moment in the development of the urban underclass.

[16] Identification of dodging-down behavior in these earlier years will not be as easy as in the lottery era. However, I am trying to access arrest records from some of the riots – comparing arrests by race, age and sex could shed some light on the motives of the rioters. As height is often recorded, a possible identification strategy might involve the height cut-offs used by the armed forces (though this idea seems on face far-fetched). Finally, I am trying to access marriage and birth records to see what role the draft might have had on out-of-wedlock birth, which begins to skyrocket during this period.

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Figure 1: Investment decisions before and after a conscription tax

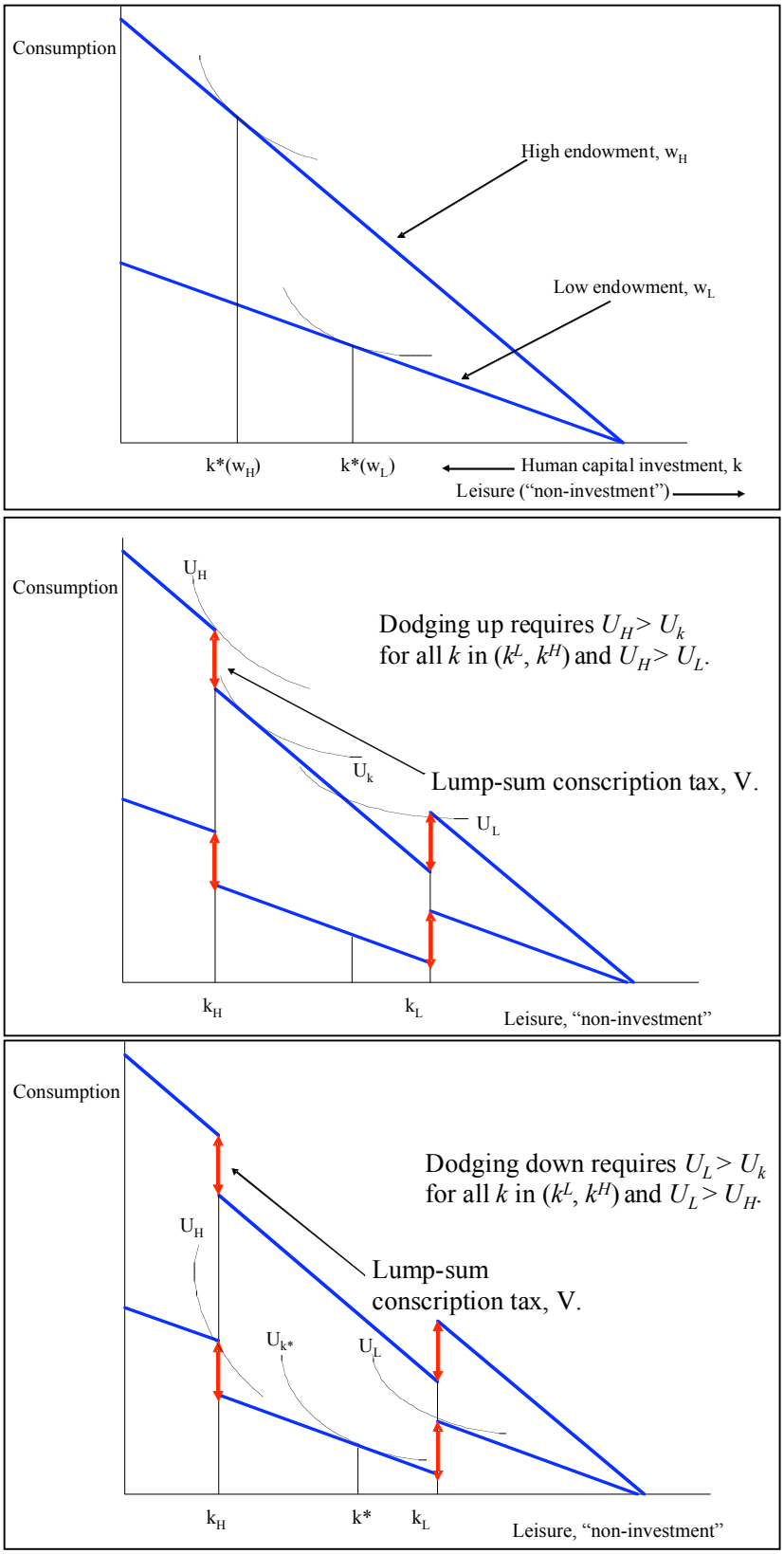
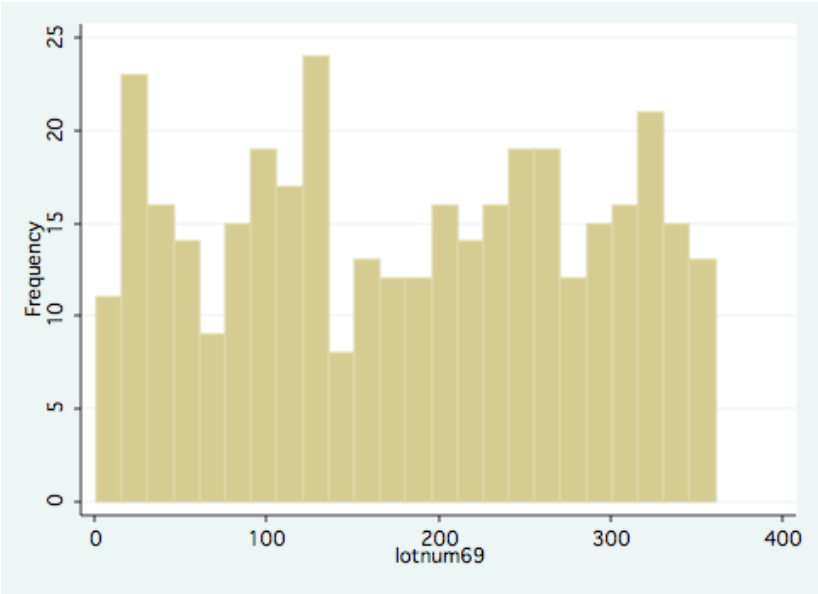
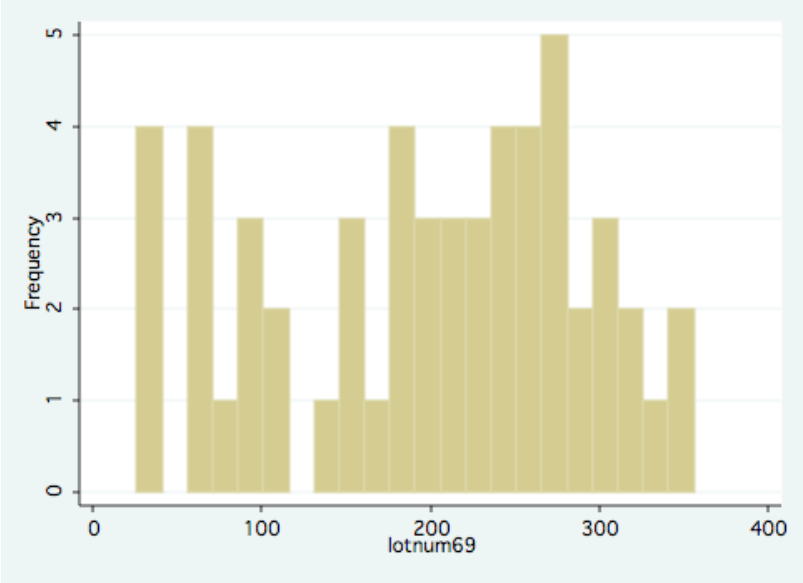


Figure 2: Distribution of 1969 lottery numbers

Panel A: Distribution for whites

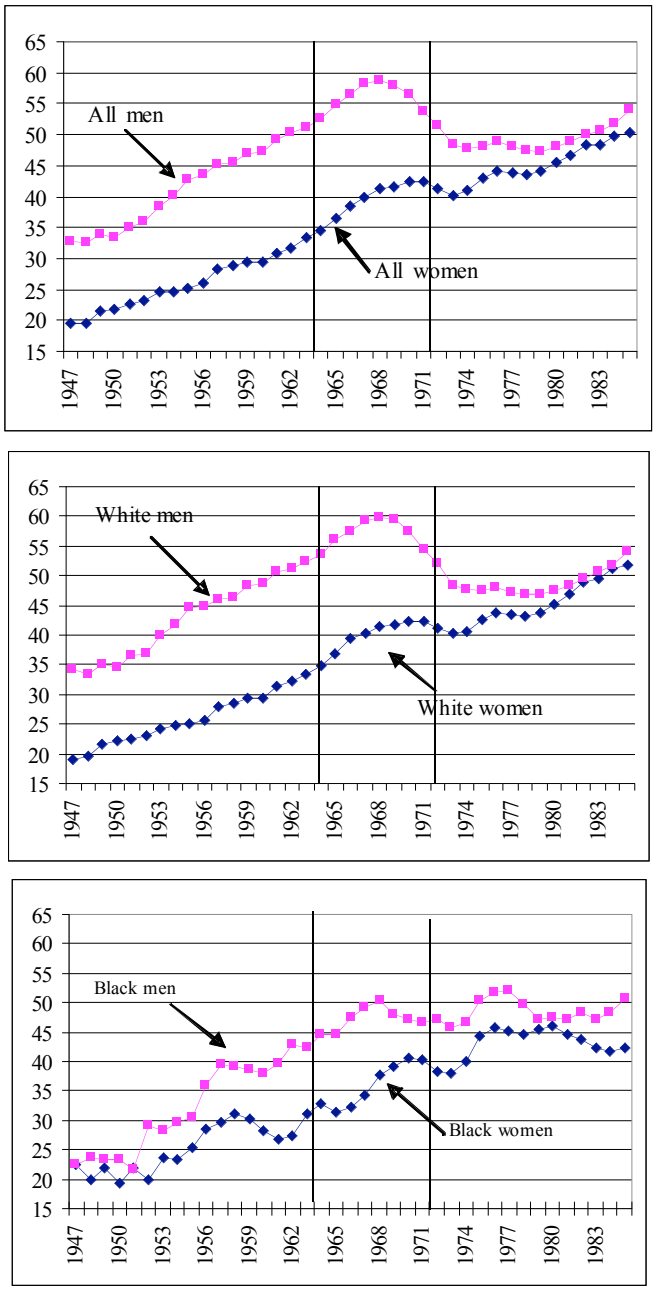


Panel B: Distribution for blacks



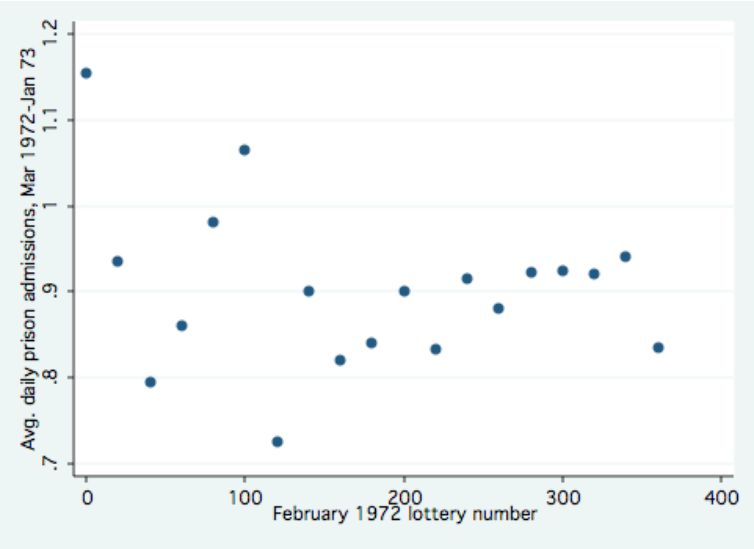
Source: Transitions dataset

Figure 3: Percent of 19-year olds enrolled in school, 1947 – 1985



Source: Three-year moving averages generated from CPS aggregate data

Figure 4: Prison admissions as a function of lottery number



Source: Georgia Department of Corrections

Table 1: Relationship between opinion on the war and individual characteristics

	"Continuing fighting even if several hundred U.S. soldiers killed each week"	*"Gradually withdraw and let S. Vietnamese work out their own problems"*	*"End the fighting now even if it means eventual control of S. Viet. by the V. Cong"*
Black	-0.220**	0.252**	0.162**
	(0.0378)	(0.0387)	(0.0346)
Education level	0.0442**	-0.0302**	-0.0224
	(0.010)	(0.0101)	(0.00928)
Middle or upper class	0.0342	-0.0510*	-0.0124
	(0.0272)	(0.0268)	(0.0247)
Male	0.158**	-0.147**	-0.0197
	(0.0256)	(0.0256)	(0.0246)
Age	0.000831	0.0000983	-0.00124*
	(0.000830)	(0.000832)	(0.000744)
Mean	0.411	0.412	0.282
Obs.	1374	1391	1482
R-sq.	0.0990	0.0891	0.0382

Notes: Data from "Public Opinion and the War in Vietnam Study," National Opinion Research Council, 1966. "Educational level" has a range of zero (no school) to eight (beyond college) and "middle and upper class" is a dummy variable coded as one if an individual identifies himself in these groups (as opposed to "working class" and "lower class").

Table 2: Summary statistics from the Transitions dataset

Panel A: Comparing means and standard deviations of key variables across samples

Variable	*Transitions, original sample*	*Weighted NLS66*	*Transitions, regression sample*	*Transitions, regression sample (blacks)*	*Transitions, regression sample (low SES)*
Black	0.115 (0.319)	0.119 (0.324)	0.128 (0.335)	1.00 (0.00)	0.375 (0.489)
Mom completed HS	0.664 (0.472)	0.548 (0.497)	0.632 (0.482)	0.540 (0.503)	0.133 (0.343)
IQ score	108.6 (12.28)	103.9 (15.01)	108.5 (11.22)	98.9 (14.3)	96.9 (12.8)
10th percentile or below, SES	0.105	--	0.115 (0.320)	0.367 (0.487)	1.00 (0.00)
Plans to attend college, 1966	0.587 (0.492)	--	0.601 (0.490)	0.545 (0.502)	0.458 (0.503)
Enrolled in college, 1970	--	--	0.517	0.400 (0.494)	0.292 (0.459)
Normalized 1969 lottery number	--	--	-0.007 (0.286)	-0.043 (0.253)	-0.010 (0.287)
Observations	2213		427	55	48

Notes: "SES" is a variable created in the Transitions data based on the Duncan index of the householder's occupation, father's education level, mother's education level, number of books in the household, number of rooms per person, and a "possessions in the home" index (e.g., television, major appliances). Normalized lottery number = 0.5 – (N/365) where N is the original number from the 1969 draft lottery.

Panel B: Summary of self-reported variables from regression sample

Variable	*Mean (st. dev.)*	*Description*
Frequency of delinquency	163.9 (51.1)	How often do you run away from home, trespass, hurt someone badly enough to need medical care, shoplifted, hit your parents, drink alcohol without permission?
Interpersonal aggression	122.5 (43.5)	Have you threatened someone with a gun or a knife, hurt someone badly enough to need medical care, been in a fight with a classmate or coworker, been in a fight where a bunch of your friends were against another bunch of people?
Theft/Vandalism	233.8 (66.3)	Have you ever stolen something worth more than $50, shoplifted, driven someone's car without permission, set fire to someone's property, set fire to a school building?
Somatic symptoms	390.2 (58.4)	Do you have nausea, panic attacks, headaches, weight loss/gain, insomnia, nightmares, dizzinss, racing of the heart? How often do you miss school due to illness?

Notes: Statistics are based on 424 observations and all variables have range (100, 500).

Table 3: The effect of lottery numbers on college attendance

	Group = Black		*Group = Low SES*	
Normalized 1969 lottery number	0.184**	0.225**	0.177*	0.227**
	(0.0914)	(0.0867)	(0.092)	(0.087)
Norm. lottery num. x Group	-0.592**	-0.367	-0.189	-0.149
	(0.275)	(0.252)	(0.257)	(0.247)
Group	-0.120*	0.0175	-0.240**	--
	(0.0715)	(0.0702)	(0.074)	
Fixed effects?	No.	Yes.	No.	Yes.
R-squared	0.110	0.381	0.134	0.391
Observations	427	427	415	415

Notes: All regressions are based on the Transitions dataset and use a linear probability model (probit drops perfectly predicted observations and thus changes the sample size when fixed effects are added). See Table 2 for variable definitions. Cols. (2) and (4) include fixed effects for SES deciles, GPA and race.

Table 4: Checks for selection bias in college-enrollment regressions

	Group = Black		*Group = Low SES*	
	IQ	*College plans*	*IQ*	*College plans*
Normalized lottery number	0.481	-0.0618	0.395	-0.0282
	(1.88)	(0.0954)	(1.919)	(0.0962)
Norm. lottery num. x Group	-4.03	-0.0220	-0.609	0.102
	(5.49)	(0.278)	(5.46)	(0.274)
Group	-6.79**	0.01869	--	--
	(1.52)	(.0773)		
R-squared	0.416	0.217	0.412	0.228
Observations	427	427	415	415

Notes: See Table 3. "College plans" is an indicator coded as one if the subject said in 1966 that he planned to go to college. Both dependent variables were collected in 1966 (wave 1).

Table 5: Effects of lottery numbers on delinquency and psychological affect, by race

	Freq. of delinquent behavior, 1970		*Interpersonal aggression, 1970*		*Theft/Vandalism, 1970*		*Somatic symptoms, 1970*	
Norm. 1969 lottery no.	-2.09 (9.15)	1.56 (10.4)	-11.7* (7.37)	03.43 (8.27)	1.73 (8.94)	5.07 (10.4)	-15.8 (10.4))	-17.9 (12.0)
Norm. lottery no. x Black	66.4** (29.2)	54.9* (30.3)	93.7** (23.3)	80.8** (24.1)	77.4** (28.3)	68.4** (30.3)	72.8** (33.8)	65.9* (35.3)
Black	6.29 (7.66)	6.16 (8.54)	17.7** (6.06)	13.5** (6.78)	14.2* (7.35)	11.6 (8.54)	7.96 (8.86)	1.25 (9.95)
Fixed effects?	No.	Yes	No.	Yes.	No.	Yes.	No.	Yes.
Obs.	424	424	424	424	424	424	422	422
R-sq	0.044	0.152	0.066	0.138	0.026	0.167	0.043	0.133

Notes: See Tables 2 and 3.

Table 6: Effects of lottery numbers on delinquency and somatic symptoms, by SES

	Freq. of delinquent behavior, 1970		*Interpersonal aggression, 1970*		*Theft/Vandalism, 1970*		*Somatic symptoms, 1970*	
Norm. 1969 lottery no.	-6.36 (9.39)	0.446 (10.6)	-12.9* (7.64)	-3.50 (8.43)	1.28 (9.06)	6.03 (10.4)	-16.6 (11.3)	-19.4 (12.3)
Norm. lottery no. x low SES	45.3* (27.6)	43.2 (29.9)	71.1** (22.4)	62.9** (23.8)	30.6 (26.6)	28.7 (29.5)	73.0** (31.5)	61.5* (34.7)
Low SES	-0.784 (7.84)	--	10.14 (6.37)	--	6.84 (7.57)	--	22.0** (9.11)	--
Fixed effects?	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.
Obs.	412	412	412	412	412	412	410	410
R-sq	0.0375	0.145	0.0526	0.127	0.0554	0.162	0.0548	0.130

Notes: See Tables 2 and 3.

Table 7: Checks for selection bias in delinquency and somatic-symptoms regressions

	Freq. of delinquent behavior, 1969		*Interpersonal aggression, 1969*		*Theft/Vandalism, 1969*		*Somatic symptoms, 1969*	
Norm. 1969 lottery no.	-8.32 (10.28)	-11.4 (10.5)	-8.98 (8.76)	-12.7 (8.81)	7.26 (10.9)	-0.327 (11.0)	-5.81 (10.52)	-4.14 (10.7)
Norm. lottery no. x low SES	3.53 (30.0)	16.1 (29.9)	21.1 (25.5)	28.3 (25.1)	-23.1 (31.7)	18.8 (31.3)	1.74 (31.23)	-18.8 (30.32)
Group	19.8** (8.33)	--	29.3** (7.14)	--	21.1** (8.82)	--	-4.58 (8.63)	--
Definition of "Group"	Black	Low-SES	Black	Low-SES	Black	Low-SES	Black	Low-SES
Obs.	427	415	426	414	427	415	425	413
R-sq	0.137	0.135	0.176	0.174	0.125	0.124	0.177	0.170

Notes: See Tables 2, 3, 4 and 5. All regressions include income-decile and GPA fixed effects. All dependent variables were recorded in spring 1969 (wave 3).

Table 8: Regressions of daily prison admission counts

	Negative binomial	*OLS*	*Probit*	*Negative binomial*
Normalized 1972 lottery number	0.437** (0.197)	0.463** (0.215)	0.228** (0.0901)	0.177 (0.173)
Dependant variable	Admissions, Mar. 1972 – Feb. 1973	Admissions, Mar. 1972 – Feb. 1973	Admissions, Mar. 1972 – Feb. 1973	Admissions, Jan. 1971 – Jan. 1972
R-squared (or pseudo R-sq)	0.0171	0.0138	0.0241	0.0197

Notes: All regressions are based on administrative prison data from the Georgia Department of Corrections and have 365 observations, based on 365 birthdays of prisoners born in 1953. The dependent variable is the number of admissions of men born on a particular birthday, except for col. (3) where it is an indicator variables for whether any men with a particular birthday were admitted.

Appendix

<u>Proposition</u>. Let k^* be the optimal choice of k without a draft and let k^D be the optimal choice of k the draft. For all utility functions homogeneous of degree one, if person i with w_i chooses $k_i^D > k_i^*$, then person j with $w_j > w_i$, will also choose $k_j^D > k_j^*$. Similarly, if j chooses $k_j^D < k_j^*$, then i will also choose $k_i^D < k_i^*$.

<u>Proof</u>. First, note that individuals with $k^* > k^H$ or $k^* < k^L$ do not react to the draft, so I can restrict attention to cases where both k_i^* and k_j^* are in (k^L, k^H). Second, any individual who chooses k^D in (k^L, k^H) will still choose $k^D > k^*$ because the draft represents a pure income effect in this region and he will consume less leisure (and thus choose a higher k). Third, anyone with k^* in (k^L, k^H) who chooses to "dodge up" ("dodge down") will choose k^H (k^L) and not some k greater than k^H (less than k^L) because by the strict convexity of U larger deviances from k^* result in lower utility.

Now, assume that $k_i^D = k^H$, so that individual i "dodges up." If individual j chooses to remain in (k^L, k^H), he will still choose $k_j^D > k_j^*$ by the income effect. What remains to prove is that he does not choose some $k_j^D \leq k^L$, which, by convexity, is equivalent to showing that he does not choose $k_j^D = k^L$.

Define $f(k,w) \equiv U(wk,-k) = U(C,L)$, which yields the following derivatives:

(A1) $$f_k = U_C w - U_L,$$

(A2) $$f_w = U_C k > 0 \quad \forall k, w, \text{ and}$$

(A3) $$f_{kw} = U_{CC} wk - U_{CL} k + U_c.$$

Because U is homogeneous of degree one,

(A5) $$U_C C + U_L L = U \quad \forall C, L,$$

which gives

(A6) $$U_{CC} C + U_{CL} L = 0 \quad \forall C, L,$$

or,

(A7) $$U_{CC} wk - U_{CL} k = 0 \quad \forall k, w.$$

Therefore,

(A8) $$f_{kw} = U_{CC} wk - U_{CL} k + U_c = U_C > 0 \quad \forall k, w.$$

So, individuals with larger initial endowments have higher consumption return on k.

Now, suppose, for the sake of contradiction, i chooses $k_i^D = k^H$ but j chooses $k_j^D =$ kL. Then, by revealed preference, $f(k^H, w_i) - f(k^L, w_i) > 0$ and $f(k^H, w_j) - f(k^L, w_j) < 0$. But,

$$f(k^H, w_j) - f(k^L, w_j) = \int_{k^L}^{k^H} f_k(k, w_j)dk > \int_{k^L}^{k^H} f_k(k, w_j)dk = f(k^H, w_i) - f(k^L, w_i) > 0$$

where the inequality comes from (A8).

A parallel proof shows that if j chooses k^L then i will choose some $k_i^D < k_i^*$.

Table A1: Result from the December 1969 draft lottery

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*
1	305	86	108	32	330	249	93	111	225	359	19	129
2	159	144	29	271	298	228	350	45	161	125	34	328
3	251	297	267	83	40	301	115	261	49	244	348	157
4	215	210	275	81	276	20	279	145	232	202	266	165
5	101	214	293	269	364	28	188	54	82	24	310	56
6	224	347	139	253	155	110	327	114	6	87	76	10
7	306	91	122	147	35	85	50	168	8	234	51	12
8	199	181	213	312	321	366	13	48	184	283	97	105
9	194	338	317	219	197	335	277	106	263	342	80	43
10	325	216	323	218	65	206	284	21	71	220	282	41
11	329	150	136	14	37	134	248	324	158	237	46	39
12	221	68	300	346	133	272	15	142	242	72	66	314
13	318	152	259	124	295	69	42	307	175	138	126	163
14	238	4	354	231	178	356	331	198	1	294	127	26
15	17	89	169	273	130	180	322	102	113	171	131	320
16	121	212	166	148	55	274	120	44	207	254	107	96
17	235	189	33	260	112	73	98	154	255	288	143	304
18	140	292	332	90	278	341	190	141	246	5	146	128
19	58	25	200	336	75	104	227	311	177	241	203	240
20	280	302	239	345	183	360	187	344	63	192	185	135
21	186	363	334	62	250	60	27	291	204	243	156	70
22	337	290	265	316	326	247	153	339	160	117	9	53
23	118	57	256	252	319	109	172	116	119	201	182	162
24	59	236	258	2	31	358	23	36	195	196	230	95
25	52	179	343	351	361	137	67	286	149	176	132	84
26	92	365	170	340	357	22	303	245	18	7	309	173
27	355	205	268	74	296	64	289	352	233	264	47	78
28	77	299	223	262	308	222	88	167	257	94	281	123
29	349	285	362	191	226	353	270	61	151	229	99	16
30	164	--	217	208	103	209	287	333	315	38	174	3
31	211	--	30	--	313	--	193	11	--	79	--	100

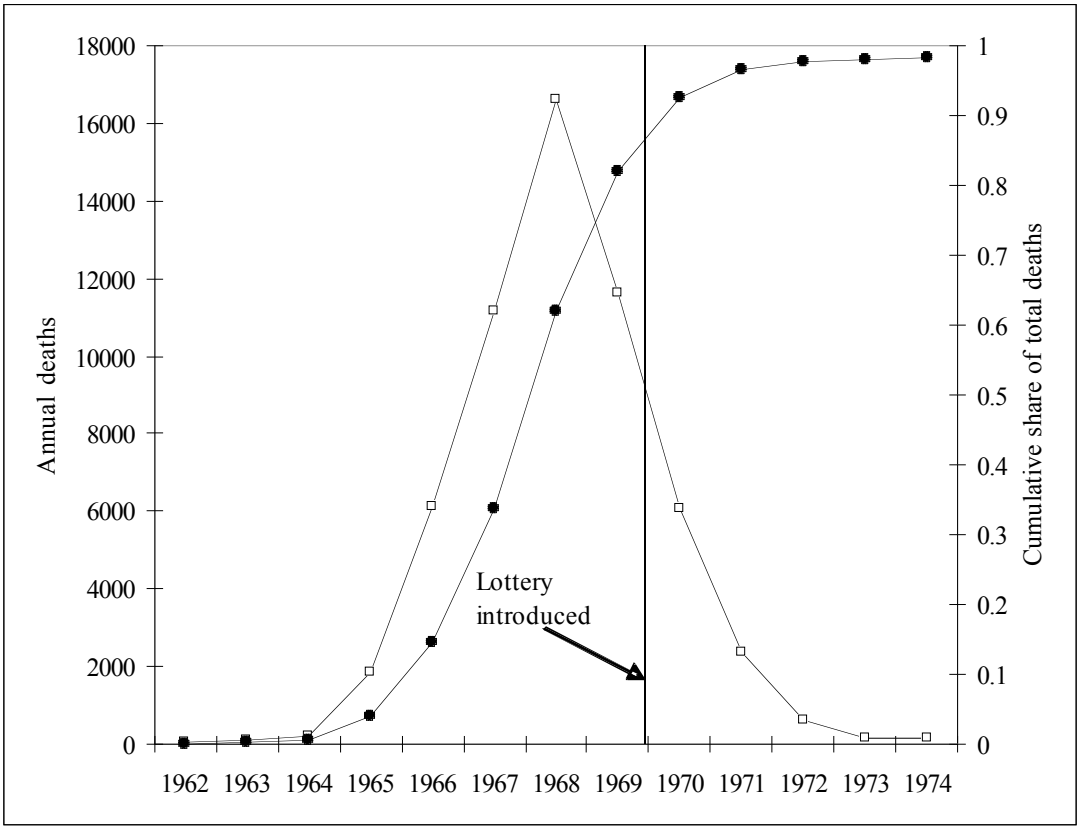



Figure A1: Vietnam War Deaths