
Tim Johnson¹, Christopher T. Dawes², Matt McGue³ and William G. Iacono³

Abstract
Previous research has reported correlations between the military service records of parents and their children. Those studies, however, have not determined whether a parent’s military service causally influences an offspring’s participation in the armed forces. To investigate the possibility of a causal relationship, we examined whether lottery numbers issued to draft-eligible men during the U.S. Vietnam-era Selective Service Lotteries influenced the military participation of those men’s children. Our study found higher rates of military participation among children born to fathers whose randomly assigned numbers were called for induction. Furthermore, we perform statistical analyses indicating that the influence of lottery numbers on the

¹ Center for Governance and Public Policy Research, Atkinson Graduate School of Management, Willamette University, Salem, OR, USA
² Department of Politics, New York University, New York, NY, USA
³ Department of Psychology, University of Minnesota, Minneapolis, MN, USA

Corresponding Author:
Tim Johnson, Center for Governance and Public Policy Research, Atkinson Graduate School of Management, Willamette University, 900 State Street, Salem, OR 97301, USA.
Email: tjohnson@willamette.edu
subsequent generation’s military participation operated through the military service of draft-eligible men as opposed to mechanisms unrelated to service such as “draft dodging.” These findings provide evidence of a causal link between the military service of parents and their children.

Keywords
recruitment/retention, public policy, military culture, family issues

Academic research has reported high rates of military participation among successive generations of the same family (Johnson and Lidow, 2016). Also known as self-recruitment, these intergenerational patterns of military service have appeared in Africa, Asia, Europe, and North America. Given the robustness of this phenomenon across geographical contexts and time periods, some scholars have speculated about “family traditions of service” in which a parent’s military participation itself encourages offspring to join the armed forces (Bartlett & Jeffery, 1996; Chowdhry, 2013; Heinecken, 1997a, 1997b; Marjomaa, 2003). Whether this intergenerational transmission actually occurs, however, is hard to substantiate: having a parent who served in the military correlates with other factors known to influence enlistment, such as socioeconomic status and values toward the military (Faris, 1984, p. 257). To account for this confounding, we studied how lottery numbers assigned in the Vietnam-era Selective Service Lotteries (VSSLs) influenced the military participation of children born to draft-eligible men. Given that these numbers exogenously assigned a higher risk of military service to draft-eligible men (Angrist, 1990), our research design eliminates the possibility that preservice factors correlated with a parent’s military participation underlie the effect of a parent’s service on the enlistment decisions of offspring.

Before discussing this research design further and reporting its findings, we first provide context for our study by explaining how the military service of parents might influence their children’s military participation and how factors included in the current literature’s dominant model of military enlistment may confound the relationship between a parent’s and a child’s military service. We then describe how data relating to the VSSL provide an opportunity to overcome this confounding. With those contextual details presented, we then describe our research design and statistical methods. Subsequently, we report our results and finish with a discussion of their significance.

Parental Military Service and Its Confounders in Models of Enlistment

The idea that parents can influence their children’s military participation via their own service in the armed forces comports with the dominant model of military
enlistment in the current literature (Taylor et al., 2013). The dominant model of the enlistment decision uses the institutional–occupational (I/O) distinction of Moskos (1977, 1981, 1986) to classify factors that compel individuals to join the military (Taylor et al., 2013). The model predicts that institutional values such as patriotism (Segal, Freedman-Doan, Bachman, & O’Malley, 2001; Woodruff, Kelty, & Segal, 2006), fidelity (Eighmey, 2006), duty (Cotton, 1988), promilitary attitudes (Bachman, Sigelman, & Diamond, 1987), and an affinity to military life (Griffith, 2008) influence the likelihood of military service alongside occupational factors such as monetary compensation (Moskos, 1977), educational benefits (Segal, 1989), workplace protections (Eighmey, 2006), and transferable job training (Browning, Lopreato, & Poston, 1973)—among other perks (Gifford, 2006; Segal, 1989). The military service of a parent may affect enlistment either independent of these factors or by shaping these institutional and occupational factors.

Consider, first, how a parent’s military service might influence institutional values. Parents with military experience convey observations about service to their children (National Research Council, 2003, p. 60), they place normative bounds on their children’s behaviors (Segal, 1986), and they foster patriotism in their children (Waldron, Whittington, & Jensen, 1985). These actions inculcate institutional values, and indeed, research shows that the children of military personnel possess institutional values conducive to military life (Paden & Pezor, 1993). Furthermore, service in the armed forces influences attitudes about politics and the military (see, e.g., Jenning & Markus, 1977), and research shows that parents transmit those values to their children (Sears & Levy, 2003). Thus, via these sources of influence on children’s institutional values, the military service of parents may encourage offspring to join the military.

Likewise, a parent’s military service could affect occupational variables that influence an offspring’s military service. To the extent that parents serving in the military gain a better understanding of occupational factors influencing enlistment—such as wages, educational financing (Segal, 1989), attractive loan arrangements (Gifford, 2006), and preferential access to civilian jobs (Johnson, 2015, 2017)—and to the extent that parents relay this knowledge to their children (National Research Council, 2003, p. 60), occupational variables might serve as a pathway through which the military service of parents influences an offspring’s military participation. Likewise, research indicates that deployment and relocation harm children’s academic achievement (Lyle, 2006), thus a parent’s service may contribute to weak job prospects and middling academic achievement, which, in turn, increases the likelihood that those occupational factors spur military service (on job prospects: Faris, 1984; on academic achievement: Bachman, Segal, Freedman-Doan, & O’Malley, 2000; Elder et al., 2010). Also, the military provides modest wages, thus preventing military families from accumulating the level of wealth that appears to deter children from participating in the military (Bachman et al., 2000; Segal & Segal, 2004). Again, through these occupational mechanisms, a parent’s participation in the military may encourage an offspring’s enlistment.
On the other hand, the variables discussed in the existing literature might merely confound factors that induce the concordant service records of parents and their children (Campante & Yanagizawa-Drott, 2015; Faris, 1981, 1984). Even a glance at military demographics raises this possibility: As was true in the draft era (Baskir & Strauss, 1978, p. 9) and remains true in the era of the all-volunteer force (AVF) (Segal & Segal, 2004), the U.S. military largely consists of males from nonwealthy families who have meet certain health benchmarks and who completed high school but did not pursue college immediately. Accordingly, the factors responsible for these attributes (e.g., military policies, genetics, regions of residence, etc.) might spur the military service of both parents and their children, thereby creating a correlation that can be easily mistaken for a causal relationship.

Such confounders become even more apparent when considering, again, the dominant model of military participation in the era of the AVF. Institutional values, for one, may stem from a source other than the prior generation’s military service. Past research shows that patriotism, for instance, exhibits a high degree of heritability unrelated to the previous generation’s military activities (Lewis, Kandler, & Riemann, 2014). Given that patriotism ranks among the factors that encourage individuals to join the military (Segal et al., 2001; Woodruff et al., 2006), any intergenerational correlation in service records might result from the nonmilitary factor that causes patriotism in both generations. Various other institutional values exhibit this same heritability (e.g., Cranmer & Dawes, 2012), thus raising the possibility that the factor causing this heritability—be it genes, region of residence, or something else—could induce a correlation between the military service records of parents and their children. Occupational influences also might impose a correlation between the military service of parents and their children. The military service of parents may result from limited job prospects in their community; if their children are raised in that same community or a community with similar attributes, then they may have a greater likelihood of following in their parents’ footsteps and joining the military to avoid a difficult local labor market. In sum, institutional and occupational factors may lurk, as confounders, behind intergenerational patterns of military service.

Furthermore, factors residing outside the I/O model of enlistment also might confound the correlation between the military service records of parents and their offspring. For instance, psychological studies have shown that personality traits correlate with participation in the military (Jackson, Thoemmes, Jonkmann, Lüdtke, & Trautwein, 2012); if these personality traits are shared by parent and child via mechanisms unrelated to a parent’s military service (e.g., genes or methods of rearing), then the concordant military service records of parents and their children may merely reflect a correlation induced by these personality traits. Still other factors that predict military service, such as the number of siblings in one’s family (Elder et al., 2010; Johnson & Kaplan, 1991), may be shared across generations via familial norms, thus influencing the military service of each generation and creating the misperception of a causal relationship between the service records of parents and those of their children.
Ultimately, identifying all of these potentially confounding factors—not to mention collecting data and controlling for them—is an ill-fated task. One can never know if an analysis has accounted for all such factors. Thus, to eliminate these confounding factors from an analysis, the ideal research design would employ a randomized experiment. By randomly assigning a factor of interest to individuals, any correlations between the factor of interest and the attributes of the individuals under study (such as their attitudes, social circumstances, or economic resources) would be eliminated. Such an experiment, for our purposes, would involve researchers assigning military service to parents randomly; then it would entail tracking the military participation of those parents’ children. When those children reached an age where joining the military would no longer appear to be plausible, researchers would compare rates of military participation between (i) children born to parents randomly assigned to serve in the military and (ii) children born to parents whose randomly assigned treatment prevented them from serving in the military. The difference in participation rates between these two groups would be the causal effect of parents’ military participation on their children’s military service.

The study we report in this article approximated this ideal research design. In our data sample, we identified fathers who were called for military induction due to the randomly assigned lottery numbers they received in the VSSLs; then we tracked the military participation of those men’s children. When the children reached approximately 29 years of age, we compared rates of the military participation between (i) children whose fathers’ draft lottery numbers were called for induction and (ii) children whose fathers’ numbers were not called for induction.

If the military service of parents and their children resulted from confounding factors, then randomly assigning military service to the parents’ generation should not affect the military service of children born to those parents. After all, in such circumstances, it is not the military service of parents, but the factors usually correlated with that military service (i.e., when no random assignment takes place), which drive children’s participation. In sum, if no causal relationship exists between the military service of parent and child, then we would expect the following relationship between a father’s draft-induced service and his child’s military participation.

**Null Hypothesis:** Even if lottery numbers assigned in the VSSL influence the likelihood of military service among draft-eligible men, we do not expect the draft-induced service of those men to influence the likelihood of military participation among their children.

However, if the military service of parents either directly influenced their children’s military participation or influenced that participation via variables known to affect enlistment, then one would expect that even the random assignment of military service to parents—via the VSSL—should affect the military participation of their children. Thus, in relation to the focus of this study, when considering how
randomly assigned lottery numbers may influence the military service of the sub-
sequent generation, we hypothesize:

**Alternative Hypothesis:** If lottery numbers assigned in the VSSL influenced the likelihood of military service among draft-eligible men, then we expect the draft-induced service of those men to influence the likelihood of military participation among their children.\(^5\)

To lay the foundation for our test of these hypotheses, we first describe the VSSL in greater depth in the next section. We then describe our research design and statistical methods in detail before presenting results.

**The VSSLs**

As described in numerous publications (viz., Angrist, 1990; Johnson & Dawes, 2016; Conley & Herwig, 2011; Erickson & Stoker, 2011; Hearst, Newman, & Hulley, 1986),\(^6\) the VSSL used randomization as a method of assigning the risk of military induction during the U.S. conflict in Vietnam. The VSSL required employees of the U.S. Selective Service System (SSS) to draw birthdates, at random, to determine which adult males would report for induction into military service in the subsequent calendar year. With each draw, the SSS assigned random sequence numbers (RSNs) to birthdates. From 1969 to 1971, RSNs sequenced the following year’s induction call. The call started with low RSNs, proceeding to larger values until reaching an “administrative processing number” (APN). The APN capped the maximum RSN called in a given year. The APN decreased from RSN 195 to RSN 125 from 1970 to 1971, then dropped to RSN 95 thereafter. Moreover, from 1972 to 1975, the SSS issued RSNs but never called them for induction. Thus, RSNs from the VSSL influenced induction for the opening 3 years of the draft, thereby crafting—in effect—a randomized experiment that exogenously assigned a higher risk of military induction (Angrist, 1990). In the remaining years, the VSSL created a veritable placebo group in which RSNs had no impact on induction despite being assigned (Angrist, 1990).

**Data**

We study the intergenerational effects of the VSSL using data from the Minnesota Twin Family Study (MTFS). Our research design does not require the study of twins; instead, at the outset of our study, we knew of no other data that provided draft-eligible men’s birthdates as well as information about the military participation of those men and their children.\(^7\) As discussed in the Method section, our statistical analysis takes account of the fact that our data concern twins. Here we focus on the data themselves.\(^8\)

Researchers conducting the MTFS perused Minnesotan’s birth certificates, from 1971 to 1990, to identify and recruit twin pairs for their study (Iacono & McGue,
At age 11 or 17, twin pairs entered the study, completed various questionnaires, and then responded to additional assessments every 3–4 years thereafter. We examine these twins at the time of the assessment scheduled for when they were approximately 29 years of age. Twins’ parents also participated and furnished their birthdates, thus allowing us to identify draft-eligible fathers born from 1950 onward and to infer those men’s lottery numbers. In the sample, 1,090 individuals had a VSSL-eligible father: 537 were born to fathers eligible for the 1969, 1970, or 1971 lottery, while 553 of those children were born to fathers eligible for one of the 1972–1975 lotteries. The MTFS data also include military service records of VSSL-eligible men and their children (1 = served, 0 = did not serve).

Given Minnesota’s demographics, 95% of participants in the MTFS identified as Caucasian and only approximately 40% of participants lived outside the Minneapolis–St. Paul metropolitan core (Iacono & McGue, 2002, p. 482). These features of the MTFS sample, as well as the sample’s small size and its focus on twins, limit our ability to generalize our findings to the broader U.S. population. Also, this homogeneity reduces the variation in military service that we would ideally like to study. For one, individuals who identify as Black have expressed a higher propensity to serve and have entered the U.S. military at disproportionately high rates (Segal & Segal, 2004, p. 9), thus making their absence from the sample a homogenizing effect on our focal dependent variable not to mention a damper on the generality of our findings. Also, for decades, Minnesota has produced fewer new personnel for the U.S. military, relative to its service-eligible population, than large states—such as California, Florida, and Texas—and states along the South Atlantic seaboard (Department of Defense, 2000, 2012; Segal & Segal, 2004, p. 11); again, such trends limit variation in our dependent variable. This limited variation in our dependent variable hinders our ability to detect effects and, in effect, penalizes our study, thus making any observed effects more noteworthy.

Demographic information about the U.S. military also indicates that males exhibit a greater likelihood of entering the armed forces than their female peers (Segal & Segal, 2004, pp. 26–30). In our data, 604 (55%) individuals identify as female and 486 (45%) individuals identify as male. To demonstrate the robustness of our findings, we report—in the Supplementary Materials—results from an analysis that replicates our methods only on the males in our sample; despite a diminishingly small sample size, we find results consistent with those reported here, albeit with slightly less precision due to the limited number of observations in those analyses.

**Analytic Design and Statistical Methods**

In our study, we test the null hypothesis that draft-induced military service did not affect the military participation of children born to draft-eligible men. First, to provide insight into the data that we use to test this hypothesis, our analysis cross tabulates fathers’ lottery numbers (RSNs) relative to the APN (1 = RSN ≤ APN; 0 = RSN > APN) with their children’s service records (1 = served, 0 = did not serve).
We perform Fisher’s exact test on this cross tabulation to test whether a father’s lottery number relative to the APN is statistically independent of his child’s military participation. Such a test provides face validity for the more complex statistical analysis used to test the focal null hypothesis of the study.

To test the null hypothesis that the military participation of children born to draft-eligible men was not affected by their fathers’ draft-induced service, even if draft lottery numbers influenced their fathers’ service records, we use the instrumental variable design pioneered by Angrist (1990). Implemented via a two-stage least squares (2SLS) regression model, this design involves the estimation of a first-stage model in which a binary indicator signaling if a father served (1 = served, 0 = did not serve) is regressed on the numeric value of fathers’ lottery numbers (RSNs; we also perform, as a robustness check, an analysis in which we use, as an independent variable in the first stage, an indicator signaling whether a father’s lottery number falls at or below the APN). Then, in the second stage, the military service of fathers’ children (1 = served, 0 = did not serve) is regressed on the predicted values from the first-stage regression, thus focusing estimation on exogenous variation in parents’ military service. Correction of errors to take into account the two-stage estimation in the 2SLS model is achieved via our statistical software (Stata, version 14). Also, given that our sample consists entirely of twin pairs, we expect clustering of errors within families; this clustering would lead to inaccurate estimates of standard errors without corrective measures, thus we report robust standard errors clustered on each family. We apply these methods, respectively, to separate data sets consisting of (a) children born to fathers who were eligible for one of the drafts in which individuals were actually called for induction (i.e., the drafts with numbers called in 1969, 1970, and 1971) and (b) children born to fathers who were eligible for one of the drafts in which individuals were not called for induction (i.e., the drafts with numbers called after 1971). We expect the children of men born in 1950, 1951, and 1952 (whose lottery numbers were assigned in 1969, 1970, and 1971) to enter military service at significantly higher rates if their father’s lottery number was beneath the APN because those draft-eligible men actually were called for induction if their RSN was less than or equal to the APN. Draft-eligible men born in later years (1953–1956), however, never had their lottery numbers called for induction, thus, we do not expect lottery numbers to influence the military participation of fathers in this later group of data and, in turn, we do not expect estimates of the effect of lottery numbers on participation among those cohorts to predict offspring enlistment. That is, we expect to reject the null hypothesis when studying the children of fathers born from 1950 to 1952, but we do not expect to reject the null hypothesis when focusing on the placebo birth cohorts from 1953 to 1956.

Results

Before using sophisticated methods to assess the possibility that a father’s draft-induced service influenced his child’s military participation, we first performed a
“face validity” test to examine whether the position of lottery numbers relative to the APN is independent of the military service of the subsequent generation. Our test indicated that we could reject the null hypothesis of independence. Table 1A shows that children whose fathers received a number—in the 1969–1971 lotteries—that was equal to or less than the APN reported entering the military at higher rates (9.9%) than children born to fathers receiving lottery numbers above the APN (3.4%). Indeed, in Table 1A, we can reject the null hypothesis of independence between children’s service records and the value of their fathers’ lottery numbers relative to the APN (Fisher’s exact test, two-sided, $p = .003$; Pearson’s $\chi^2 = 9.582$, $p = .002$). Table 1B shows that this pattern does not appear when examining the service records of children born to fathers eligible for the 1972–1975 lotteries (Fisher’s exact test, two-sided, $p = .589$; Pearson’s $\chi^2 = 0.796$, $p = .372$); this null finding is expected, given that no numbers were called for induction in the final 4 years of the VSSL.

Furthermore, to test our focal null hypothesis and assess whether the effect of lottery numbers on children’s military participation can be attributed to a father’s military service, we estimated 2SLS model (see Table 2). In the model’s first stage, fathers’ military service records were a function of their draft lottery numbers, then, in the second stage, children’s military service records were modeled as a function of their fathers’ draft-induced risk of service (i.e., the predicted values from the first stage), which we refer to as the “draft instrument” (Angrist, 1990; Johnson & Dawes, 2016). In effect, this model captures the practical process by which a father’s lottery number influence his child’s military participation: First, the numbers influence a father’s military service, then the father’s military service influences the offspring’s military participation. The model therefore tests whether lottery numbers influenced

<table>
<thead>
<tr>
<th></th>
<th>Greater than APN</th>
<th>Equal to or Less Than APN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. 1969–1971 Lotteries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s Military</td>
<td>Did not serve</td>
<td>313 (62%)</td>
</tr>
<tr>
<td>Service Record</td>
<td>Served</td>
<td>11 (34%)</td>
</tr>
<tr>
<td><strong>B. 1972–1975 Lotteries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s Military</td>
<td>Did not serve</td>
<td>405 (76%)</td>
</tr>
<tr>
<td>Service Record</td>
<td>Served</td>
<td>17 (85%)</td>
</tr>
</tbody>
</table>

Note. Panels A and B show cross tabulations of (i) a father’s lottery number relative to the administrative processing number (APN) and (ii) his children’s service records. Panel A consists of data concerning fathers eligible for the 1969–1971 lotteries and their children. Panel B consists of data concerning fathers eligible for the 1972–1975 lotteries and their children. Percentages listed in the table refer to column percentages for a given row of data.
### Table 2. The Effect of Fathers’ Draft-Induced Service on Offspring’s Military Participation.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First-Stage Dependent Variable</td>
<td>Second-Stage Dependent Variable</td>
<td>First-Stage Dependent Variable</td>
<td>Second-Stage Dependent Variable</td>
</tr>
<tr>
<td>Father’s military service</td>
<td>Father’s Military Service</td>
<td>Child’s Military Service</td>
<td>Father’s Military Service</td>
<td>Child’s Military Service</td>
</tr>
<tr>
<td></td>
<td>−1.6 × 10^{-3}***</td>
<td>5.9 × 10^{-5}</td>
<td>0.31*** (0.06)</td>
<td>0.06 (0.05)</td>
</tr>
<tr>
<td></td>
<td>(2.6 × 10^{-4})</td>
<td>(2.2 × 10^{-4})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s lottery number equal to or less than the APN (0, 1)</td>
<td>—</td>
<td>—</td>
<td>0.20* (0.08)</td>
<td>—</td>
</tr>
<tr>
<td>Instrument</td>
<td>—</td>
<td>0.38 (2.08)</td>
<td>0.22* (0.09)</td>
<td>0.30 (0.43)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.63*** (0.06)</td>
<td>0.11* (0.05)</td>
<td>0.21*** (0.03)</td>
<td>0.11*** (0.02)</td>
</tr>
<tr>
<td></td>
<td>9.0 × 10^{-3}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>531</td>
<td>548</td>
<td>531</td>
<td>548</td>
</tr>
<tr>
<td>First-stage F-Statistic</td>
<td>40.82</td>
<td>0.07</td>
<td>29.22</td>
<td>1.27</td>
</tr>
<tr>
<td>First-stage $R^2$</td>
<td>.12</td>
<td>.0003</td>
<td>.11</td>
<td>.006</td>
</tr>
</tbody>
</table>

Note. Each cell in the central part of Table 2 presents estimates from two-stage least squares regression models. Estimated coefficients appear without parentheses. Robust standard errors clustered on families appear within parentheses. The cell indicating the model designation (1–4) indicates the data subset on which a given model is estimated. Values are rounded. APN = administrative processing number.  
* $p < .05$. ** $p < .01$. *** $p < .001$ (tests are two-tailed).
a father’s likelihood of military service, which, in turn, influenced a child’s likelihood of enlistment; we would expect to observe that chain of causation among fathers and offspring in the test group (Model 1, Table 2) but not among those in the placebo group (Model 2, Table 2).

As shown in Model 1 of Table 2, the estimated coefficient associated with the draft instrument indicates that the likelihood of military service among offspring increases with their fathers’ likelihood of draft-induced military service ($\beta = .20$, cluster robust standard error = .08, $p = .01$). Increasing a father’s linear probability of draft-induced military service by 0.10 boosts his child’s probability of service by about 0.02. Given the low base rate of military participation among children (4.78%), this increase raises a child’s relative risk of service by over 40%, $0.418 = (0.0678 - 0.0478)/0.0478$.

In contrast with these findings, lottery numbers did not influence the military service records of fathers eligible for the 1972–1975 VSSLs, nor did it affect the service records of those men’s children (Table 2, Model 2). That is, when estimating the same specification as Model 1 on the 1972–1975 lottery cohorts, the estimated coefficient associated with men’s lottery numbers takes a diminutive positive value roughly three magnitudes smaller than its standard error; moreover, the first-stage $F$-statistic of the model equals 0.07, implying instrument weakness (Staiger & Stock, 1997). In the second stage, the coefficient associated with the draft instrument appears small relative to its standard error, and we cannot reject the hypothesis that no relationship exists between a father’s risk of draft-induced service and his child’s service record.

To examine the robustness of findings from Models 1 and 2 of Table 2, we replaced fathers’ draft lottery numbers in the first stage of the 2SLS model with a binary indicator signaling whether or not a father’s draft lottery number was equal to or less than the APN in his year of eligibility ($1 = \text{equal to or less than APN}, 0 = \text{greater than APN}$). This model tests whether having a lottery number called for induction influenced a father’s likelihood of military service, which, in turn, influenced a child’s likelihood of enlistment; once again, we would expect to observe that chain of causation among fathers and offspring in the test group (Model 3, Table 2) but not among those in the placebo group (Model 4, Table 2).

When estimating this model on data concerning men eligible for one of the 1969–1971 lotteries (Model 3, Table 2), the draft instrument’s estimated coefficient is positive, and we can reject the null hypothesis that it equals 0 with 95% confidence ($\beta = .22$, cluster robust standard error = .09, $p = .02$). As in Model 1 of Table 2, this finding indicates that a father’s draft-induced service influenced the military service of his child. When estimating the revised model specification on data concerning men eligible for one of the 1972–1975 lotteries (Model 4, Table 2), the draft instrument’s estimated coefficient is negative and—as in Table 2, Model 2—we cannot reject the null hypothesis that the coefficient equals 0 ($\beta = -.30$, cluster robust standard error = .43, $p = .48$). This pattern of results conforms to what we would
expect if a father’s draft-induced military service affected his offspring’s participation in the armed forces.

**Discussion and Conclusion**

Our findings indicate that draft lottery numbers influenced the military service of draft-eligible men, which, in turn, influenced the military participation of those men’s children. These results carry implications for research studying military enlistment, military personnel management, and the legitimacy of the armed forces, not to mention research focusing on general theoretical issues in the social sciences.

With respect to research concerning the enlistment decision, the results reported here indicate that the influence of a parent’s military service on the next generation’s military participation does not result from confounding relationships with institutional or occupational factors identified in the current literature’s dominant model of the enlistment decision (on that model, see Bachman et al., 1987; Browning et al., 1973; Cotton, 1988; Eighmey, 2006; Griffith, 2008; Moskos, 1977; Segal, 1989; Segal et al., 2001; Taylor et al., 2013; Woodruff et al., 2006). The exogenous assignment of military service via the VSSL severs any such confounding relationship. Thus, our findings reveal that a parent’s military service either independently influences a child’s military service or causally affects institutional and/or occupational factors that trigger military participation.

The possibility that a parent’s military participation acts as the causal force driving proximate institutional or occupational factors opens new avenues for research. Future studies should examine whether a parent’s military service shapes institutional values—such as, say, patriotism—that increase the likelihood an individual serves in the military. Also, studies ought to examine whether a parent’s participation in the armed forces changes an offspring’s understanding of the occupational dimensions of military participation, thus influencing the next generation’s military participation through the occupational attributes of military service that have grown more prominent in the AVF era (Moskos, 1977). Pursuing these lines of research will help scholars gain a better understanding of how a parent’s military service exactly fits in the I/O model of enlistment; the present results justify such new avenues of inquiry by showing that a parent’s service yields a causal effect on an offspring’s participation.

Scholars interested in the enlistment decision may also consider studying the extent to which a parent’s military service underlies well-known correlates of military service such as an individual’s geographic location. Evidence indicates that some regions of the United States produce more military recruits than others (Segal & Segal, 2004), yet the reason for this pattern remains unclear. Familial influences offer a plausible explanation: If families have a high likelihood of living in the same region from generation to generation, then an apparent geographical correlation may result from traditions of military service within families. Such a mechanism, moreover, could lead to ever-stronger geographical correlations if former military
personnel increasingly reside, with their families, in locations separate from non-
veterans (Teachman, 2013). In such circumstances, family traditions of service
coupled with a tendency for families to stay put in the same geography could yield
high volumes of recruits in some areas and not others. Indeed, one can imagine
family influences beyond a child’s parents—such as, say, the influence of grand-
parents, uncles, and aunts—as also being confounded with geography and further
reinforcing geographic correlations driven by intergenerational patterns of service
within families. Exploring such correlations and the influence of these other family
influences is a task for future research.

In terms of military personnel management, our results suggest that recruiters can
view the children of military personnel as reliable candidates for service. In addition
to possessing a keen understanding of what military life entails (Durand, 2006), the
children of military personnel have a higher probability of joining the armed forces
than do their peers in the population writ large. Thus, save for the ethical implica-
tions of cultivating a military force from a small portion of the population, recruiters
aimed at military families might enhance the self-recruitment documented in
the present study.

This self-recruitment may also carry implications for performance manage-
ment. Past research indicates that personnel from military families prove to be
more successful in their military careers than other individuals (Karsten, 1983). Although this evidence might indicate that the children of military personnel simply understand how to climb career ladders in the armed forces, it could also signal that the children of military personnel possess attributes that enhance their performance in martial endeavors, and this performance leads to their career success. For instance, individuals who come from military families might have more realistic expectations about military service and the opportunities therein. Viewed in this light, our findings suggest that facilitating traditions of military service within families represents a possible avenue to improve the performance of the armed forces.

However, promoting self-recruitment runs the risk of casting a pall over the
legitimacy of the armed forces. Janowitz (1975) concluded that “[i]n the United
States, the legitimacy of the military requires that it avoid undue self-recruitment
and that it have a broadly representative social composition” (p. 440). Our research
speaks directly to the first of these requirements, as it shows that the VSSL did not
hinder self-recruitment. Furthermore, our research speaks indirectly to the second
requirement that Janowitz (1975) identified: Given evidence that the VSSL dispro-
portionately drafted individuals who identified as poor, Black, high-school educated,
or some combination of those characteristics (Baskir & Strauss, 1978; Shields,
1981), the self-recruitment captured in our study may have perpetuated the inequal-
ities created by the draft. Future studies can build on the present research by con-
sidering that hypothesis.

Our findings also offer a foundation for investigations into broader theoretical
issues in the social sciences such as the intergenerational effects of institutions on
behavior. That is, prominent theorists across the social sciences have postulated that institutions can shape behavior well after they have ceased to operate (e.g., Berger & Luckmann, 1967, pp. 72–79; Bowles, 1998; Burke, 1790/1990; de Tocqueville, 1835/1991, pp. 473–528; Hirschman, 1982; Marx, 1936/1867, p. 13; Putnam, Leonardi, & Nanetti, 1993; Schumpeter, 1917/1955). Empirically testing that claim, however, has proven to be difficult due to the rarity of multigenerational, experimental data. Our study overcomes this problem and indicates that the speculation of past theorists proves to be insightful: The lottery institution’s intended effect on one generation carried over to the subsequent generation, even though the latter generation never faced the institution directly.

Moreover, the present findings illuminate the literature on occupational inheritance (Duncan & Hodge, 1963; Laband & Lentz, 1983; Laspita, Breugst, Heblich, & Patzelt, 2012). Studies of occupational inheritance have struggled to control for lurking variables, thus making it unclear what causal forces drive concordant choices of jobs between parents and offspring (Grusky & Weeden, 2001). Our article provides evidence that a parent’s job—as opposed to other social or economic factors—can drive an offspring’s choice of occupation. That is, our study rules out confounding variables by showing that the exogenous assignment of a job (here, military service) to an individual can make an offspring more likely to hold that same job.

Finally, our findings carry consequences for the use of randomization in social policies. Philosophers have deemed randomization, due to its arbitrary nature, an ethical means of allocating burdens or benefits when other distributional rules cannot be justified (Elster, 1989; Stone, 2011). However, our findings reveal that randomly assigning a policy intervention in one generation can lead to nonarbitrary effects in a subsequent generation. For the VSSL, this nonarbitrary effect came in the form of intergenerational transmission. The VSSL shaped the military service of two generations of Americans by creating a causal link between a father’s participation in the armed forces and his child’s military service.

**Declaration of Conflicting Interests**
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**
The authors received no financial support for the research, authorship, and/or publication of this article.

**Supplemental Material**
The online data supplements are available at http://journals.sagepub.com/doi/suppl/10.1177/0095327X17707197
Notes


2. One could speculate that, by mere chance, a correlation between preservice factors and military participation could persist despite the assignment of military induction via birthdate in the Vietnam-era Selective Service Lottery (VSSL). For this chance phenomenon to occur, preservice factors would have to correlate with the random selection of birthdates called in each annual lottery. That is, preservice factors would need to correlate consistently and serendipitously with each different set of birthdates called for induction in every year of the draft. The probability of such a phenomenon occurring is diminishingly small.

3. Johnson & Dawes (2016) provides parallel reasoning for the case of studying the effect of military service on the civic participation of children born to veterans. We echo this reasoning for the purpose of creating a clear rationale for the present design.

4. The ability to draw causal inferences from this “ideal” design rests on the assumption that military service does not influence the decision to have a child. Past research (viz., Johnson & Dawes, 2016) supports that assumption. Moreover, we draw directly on that research in conceptualizing and describing our ideal research design (see Johnson & Dawes, 2016).

5. During the review of this article, we encountered a National Bureau of Economic Research working article by Goodman and Isen (2015), which tested this hypothesis with authoritative data relating to individual’s U.S. federal taxes. Thus, the research reported here represents a separate test of that hypothesis, using different data.

6. Erickson and Stoker (2011) have noted that there is probably not a novel way to describe the draft and others (Johnson & Dawes, 2016) have quoted Erickson and Stoker (2011), thus indicating that there is now probably not a novel way to describe that there is not a novel way to describe the draft. Thus, the description provided in this article should be viewed as reproducing the description provided by previous authors.

7. As mentioned in Note 2, Goodman and Isen (2015) use different, nonpublicly available data that also facilitate our study’s hypothesis.

8. Previous research has used the Minnesota Twin Family Study (MTFS) data to examine the effect of the VSSL on the children of draft-eligible men (namely, Johnson & Dawes, 2016). As with a description of the draft itself, it proves to be difficult to
devise a completely novel means of characterizing the MTFS, and thus, we emphasize here that our description inevitably relies on the portrayal of the MTFS in past research (again, namely, Johnson & Dawes, 2016).

9. Studies involving the VSSL focus solely on draft-eligible men born after 1950 because older, eligible men harbor attributes that prevented their selection in earlier drafts, thus making them poor comparisons to individuals who were 19 years of age in their year of eligibility for the VSSL (see Angrist, 1990).

10. We find it worth emphasizing that our results suggest that even when the military does not target recruiting at military families and even when personnel selection policies involve a combination of conscription and volunteering, the costs of serving in the armed forces still fall heavily on a select group of families.

References


Author Biographies

Tim Johnson is an associate professor of public management and public policy at Willamette University’s Atkinson Graduate School of Management. Beginning in June 2017, he will become the Director of Willamette University’s Center for Governance and Public Policy Research and will hold Willamette University’s Grace and Elmer Goudy Chair in Public Management and Policy Analysis. His interdisciplinary research focuses on the interaction of behavior and institutions.

Christopher T. Dawes is an assistant professor in the Wilf Family Department of Politics at New York University. His interdisciplinary research has appeared in journals such as Nature, Proceedings of the National Academy of Sciences, and the American Political Science Review, among other outlets.

Matt McGue, codirector of the Minnesota Center for Twin and Family Research, is a regents’ professor of psychology at the University of Minnesota.

William G. Iacono, codirector of the Minnesota Center for Twin and Family Research, is a regents’ professor of Psychology, Psychiatry, Neuroscience, and Law at the University of Minnesota.