



Department of Political Science

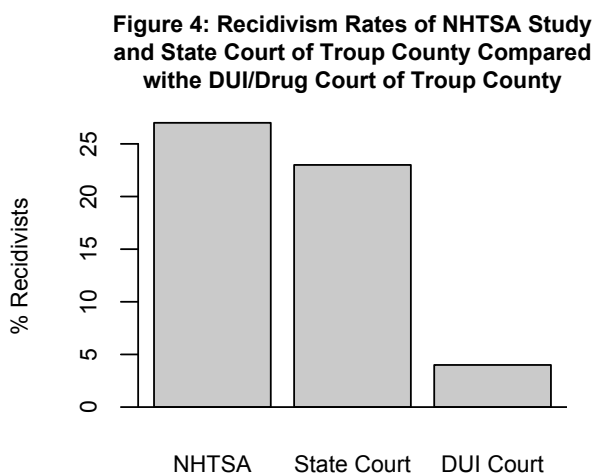
Report 1 2012

DUI/Drug Court of Troup County Impact Evaluation: Reductions in Recidivism

Executive Summary

In the summer of 2008, the Department of Political Science at LaGrange College was approached by Judge Jeannette Little of the D.U.I./Drug Court of Troup County. Judge Little asked the Department to conduct an evaluation of the Court as part of the College's on-going community research activities. This Report considers the impact of the Court on levels of recidivism for defendants referred there. Studies of the Court's processes and other matters are scheduled for completion in the future.

To provide a useful evaluation of the effects the Court has had on recidivism for its participants, data was collected for three different groups of DUI defendant: 199 participants in the Court's programs, and two control groups: 285 "Retrospective Control Group" defendants from the recent NHTSA study of DUI Courts in Chatham, Hall, and Clarke Counties, and 1402 defendants tried in the State Court of Troup County before the DUI/Drug Court was established. Defendants from the control groups were matched statistically to the 199 Court participants on age, race, sex, and prior DUI/drug offenses. Once the groups had been matched, recidivism rates (i.e. rearrest on a new DUI or VGCSA charge) were calculated for each group. Figure 4 from the Report summarizes the results in terms of recidivism rates for matched groups of defendants.



Further analysis confirms substantial average reductions for participants in the DUI/Drug Court programs in comparison to both the NHTSA defendants (33%) and the State Court of Troup County defendants (16%). Obviously, the Court is having a salutary effect on DUI and VGCSA offenders referred to it. There is strong evidence, in other words, that the Court's mission to break the cycle of substance abuse has been successful.

Introduction

In the summer of 2008, the Department of Political Science at LaGrange College was approached by Judge Jeannette Little of the D.U.I./Drug Court of Troup County. Judge Little asked the Department to conduct an evaluation of the Court as part of the College's on-going community research activities. This report marks the end of the first stage of this evaluation effort. It considers the impact of the Court on levels of recidivism among defendants referred there. Studies of the Court's processes and other matters are scheduled for completion in the future.

More particularly, this study will attempt to determine the effect being subject to the jurisdiction of the Court has on recidivism rates. To do this, the defendants processed by the Court from its founding in 2004 up until the end of 2008 were compared to two matched control groups, one drawn from a study of the impact of Georgia D.U.I. courts by the National Highway Traffic Safety Administration (hereinafter NHTSA) and another from D.U.I. defendants adjudicated by the State Court of Troup County from 1999 to 2004, before the Court was fully established (Fell, Tippetts, and Langston 2008).

The study proceeds in four sections. First, the Court's history and basic processes are presented. Second, the methods used to determine the effect of the Court on recidivism are explained and the results of the matching process used for both control groups are shown. Third, the predicted treatment effects of the Court on D.U.I. defendants when compared to the two control groups are presented and explained. Finally, some conclusions are made concerning the Court's impact in relation to its goals.

The D.U.I./Drug Court of Troup County

The Court began processing defendants in February 2004. on the initiative of Troup County State Court Judge Jeannette Little and Lloyd Dunlap, the Court's Counseling Services Director. The program started with 10 participants. Since then the Court has processed 318 participants. 147 of these are "graduates"; i.e. participants that have fulfilled all requirements of the Court's program. Other participants, with a few exceptions, have been through most of the program, but, for one reason or another, did not fulfill the Court's requirements before their probationary period lapsed. Today, the Court is helping 41 active participants.

The Court's mission is described on its website:

The mission of the Troup County D.U.I. / Drug Court is to promote a safer community by identifying substance abusing offenders to help them successfully complete a judicially supervised, treatment program. The goal is to help the offender break the chains of abuse which will result in an improved quality of life for both the offender and his or her family and will also result in a reduction in crime and recidivism in the courts (Troup County Georgia N.D.).

To accomplish this, the Court uses a post-adjudication referral program for non-violent misdemeanor defendants with serious, longstanding problems with drug and/or alcohol abuse. Those admitted to the program are carefully screened to include defendants with at least two recent outstanding convictions for illegal substance abuse. Participants are initiated into a 12 month program with three phases. The first is a 20 week program including a minimum of 55 to 65 hours of group and individual work aimed at establishing a

knowledge of substance abuse as a condition, self-diagnosis, and relapse prevention. The second phase, also 20 weeks, involves more advanced work and relapse prevention procedures. The third phase is a 12 week “aftercare” program emphasizing increased responsibility and independence. The program involves counseling and random drug and alcohol testing partially paid for by the defendants themselves through a system of fines and fees. Those who fail to abide by the program’s requirements are subject to sanctions or to having their probation revoked and/or an arrest warrant issued for them (Troup County Georgia N.D.).

Preparing for Evaluation of the Court’s Impact

The best way to evaluate the results of any institution is to take an on-going process and make actual changes in it that affect some of participants, but not others. This is how true experiments work: some participants are randomly exposed to a new way of doing things (the “treatment” group) and some, again randomly chosen, continue using old procedures (the “control” group), initial measurements of performance are made, and, after a period of time, performance is measured again. If there are substantial differences in how the “treatment” and “control” groups perform, then one can be fairly certain a) that, since the people in the groups were randomly assigned to them, the possibility of some outside influence causing the differences is quite small and, consequently, b) that something of consequence, for good or ill, has happened.

The difficulty with this model for most evaluation research is that true experimental designs are seldom possible. Most institutional changes are not made in such a way that control groups can be set up without insurmountable legal, moral, or organizational problems. This is especially the case for courts; equal protection under the law is usually incompatible with true experimental designs. What normally happens is that judicial systems make changes in how courts work or create new courts because particular problems they face have been successfully addressed by such changes elsewhere. There is seldom an opportunity to establish treatment and control groups and randomly assign individuals to them.

Given these obstacles, the problem for this study is clearly illustrated by Figure 1. We can compute recidivism rates for the DUI/Drug Court where the defendants have been referred and for the control groups we will use in this study where the defendants were not referred to a DUI Court. The best hypothetical way to evaluate the impact on recidivism of a court like the D.U.I./Drug Court in Troup County would be to take all before and after measurements of the defendants referred to the Court over a set time, then *re-run history* to the founding of the court and specifically exclude the *same defendants* from being admitted to its programs. They could then be measured over the same period as if they were a control group and the relevant comparisons could be made. Obviously, this is impossible. Another way forward must be found.

In this report we are trying to evaluate the impact of being exposed to the processes in the Court on recidivism. Recidivism is usually measured by recording the re-arrest or re-conviction of convicted defendants. What *kind* of re-arrest or re-conviction is also often the question. Some studies look at re-arrest or re-conviction for any subsequent charge, others restrict the charges to those the courts involved actually tried to address. This study defines recidivism to a) fit the DUI/Drug Court’s definition of the term and b) allow the use of data from the NHTSA study. Consequently, recidivism is measured as any subsequent arrest of an already convicted defendant for DUI or drug related offenses within one year after the end of the study period.

Figure 1: The Problem We Face in Evaluating the DUI/Drug Court*

DUI/Drug Court

Age	Sex	Referred?	Recidivist?	Recidivist if Not Referred?
23	Male	Yes	Yes	?
55	Female	Yes	No	?
44	Male	Yes	No	?

Control Groups

Age	Sex	Referred?	Recidivist?	Recidivist if Not Referred?
76	Male	No	?	No
21	Male	No	?	Yes
32	Male	No	?	No

*We have data from different times and court systems concerning background characteristics of defendants referred to the DUI/Drug Court and two control groups. To evaluate the DUI/Drug Court, we must find a way to estimate how often the DUI/Drug Court defendants would have been re-arrested if *they had never been referred to the Court in the first place*. This has been called the “Fundamental Problem of Causal Inference” (Holland 1986).

We are looking at three different groups:

- The DUI/Drug Court of Troup County Defendants: This is the “treatment” group. Data on 199 defendants referred to the Court from its founding in 2004 until 31 December 2008 were provided by the Court’s administrator. Using these data allows us to determine a baseline for the Court’s impact on recidivism for defendants referred to it. Recidivism was measured until the end of 2009 for these defendants.
- The NHTSA Retrospective Comparison Group Defendants: This is the “outside control” group. Data on 285 defendants in the NHTSA Retrospective Comparison Group were provided by the Georgia Administrative Office of the Courts. These data represent defendants from the State Courts of Chatham, Clarke, and Hall Counties who were processed and sentenced between 1 January 2000 and 31 December 2002 before D.U.I. courts were established in those counties. These defendants were matched by age, race, and sex with defendants who had been referred to the D.U.I. Courts in Chatham, Clarke, and Hall Counties (NHTSA 2008, GAOC 2009). Using these data allows us to see how the Court’s impact on recidivism by comparing actual recidivism rates for DUI/Drug Court defendants to what their rates would have been if they were like defendants in *other Georgia counties* who were not referred to a D.U.I./Drug court (Fell, Tippetts, and Langston 2008).
- The State Court of Troup County Defendants: This is the “inside control” group. Data on 1402 defendants tried for D.U.I. and/or substance abuse related offenses in the State Court of Troup County between 1 January 1999 and 31 December 2004 were provided by the Troup County Court Administrator. This is the

Troup County equivalent of the NHTSA “Retrospective Control Group”; i.e. these defendants were processed for substance abuse offenses in the six years before the Court was fully established. Using these data allows us to see the Court’s impact on recidivism by comparing actual recidivism rates for DUI/Drug Court defendants to what their rates would have been if they were like defendants in *Troup County* who were not referred to a D.U.I./Drug court. Recidivism was measured until the end of 2005 for these defendants.

To do see how this study will use these data, look at the steps in the evaluation shown in Table 1. Readers will recall that what we want to do in this evaluation is to duplicate as closely as possible a true experimental design. Matching the treatment and control groups makes this possible; here we end up with three sets of defendants closely matched on their sex, race, age, and number of prior offenses. This makes it less likely that any influence except being referred to the DUI/Drug Court is causing the differences we find. Step 2 is to predict recidivism rates for the defendants in both control groups using the selected characteristics and their “propensity scores”. This gives us a set of weights that we can use in Step 3 to calculate how likely the DUI/Drug Court defendants would be to recidivate if they *had not been referred to the Court at all*. This technique is called *imputation*; it allows us to fill in the blanks in Figure 1 that we need to calculate the actual effect of being referred to the Court on recidivism (Imai, King, and Lau 2008). Finally, we can calculate the average treatment effect of the DUI/Drug Court on recidivism by comparing the actual recidivism rate of the defendants referred to it to the estimated rate found in Step 3.

Table 1: The Steps in the Evaluation Process

Step 1: Match the DUI/Drug Court Defendants with the NHTSA Retrospective Control Group and the State Court of Troup County Defendants. Insure that the treatment and control cases are a close match on propensity scores generated by matching the groups on sex, race, age, and number of prior offenses.

Step 2: Predict the Recidivism Rates of the Control Groups. Use sex, race, age, number of prior offenses, and their propensity scores to predict how often these defendants will recidivate.

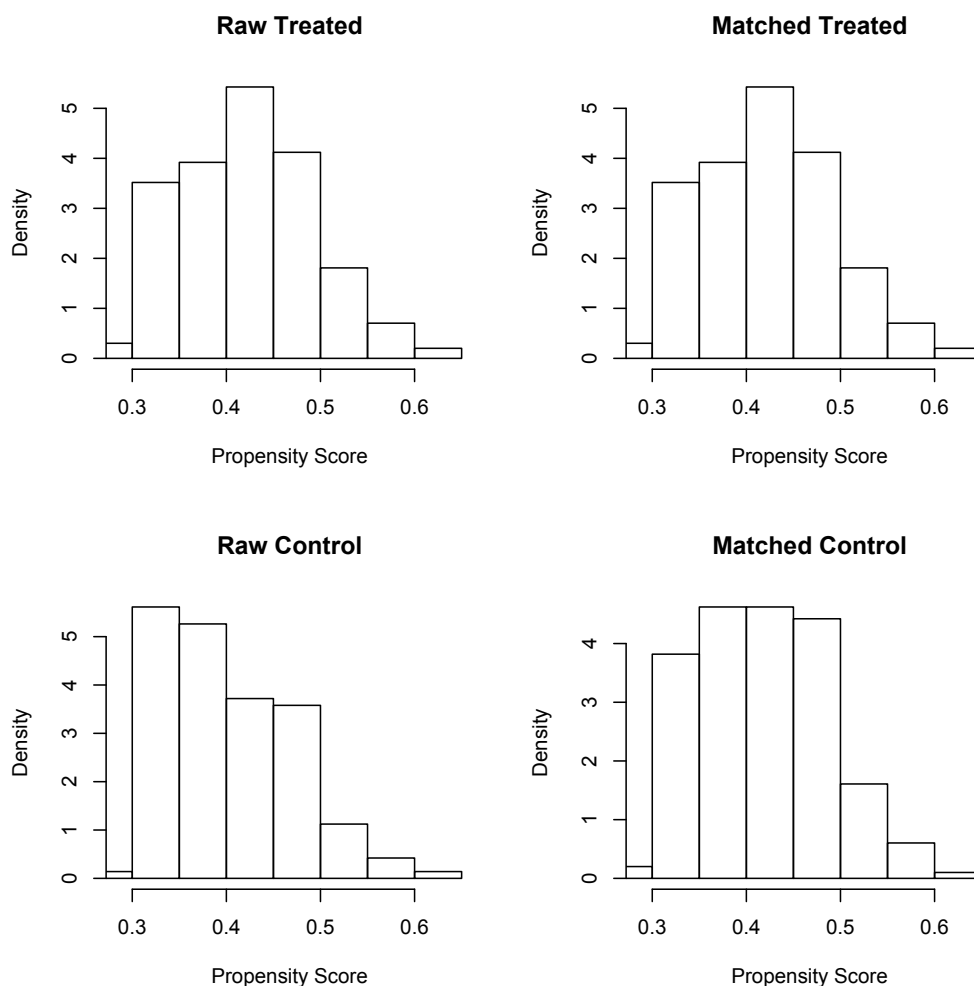
Step 3: Impute Recidivism Rates for DUI/Drug Court Defendants. Use the weights from the models in Step 2 to predict what the recidivism rates would be for the DUI/Drug Court Defendants if they had never been referred to the DUI/Drug Court.

Step 4: Calculate the Average Treatment Effect of Being Referred to the DUI/Drug Court. Average the differences between the actual recidivism rates of the DUI/Drug Court Defendants and the rates imputed to them in Step 3.

Matching Treatment and Control Groups

To make the comparisons we need to evaluate the DUI/Drug Court’s impact takes a preliminary step: the treatment group defendants must be matched to the defendants in *both* control groups. Without doing this we would be comparing apples and oranges; the sets of defendants would not match up and whatever effects were found could be due to other influences besides being exposed to the Court’s processes. Further, the use of imputation to estimate recidivism rates would be impossible.

Figure 2: Comparison of Raw and Matched Propensity Scores for
DUI/Drug Court of Troup County Defendants and the NHTSA Retrospective Control Group Defendants*

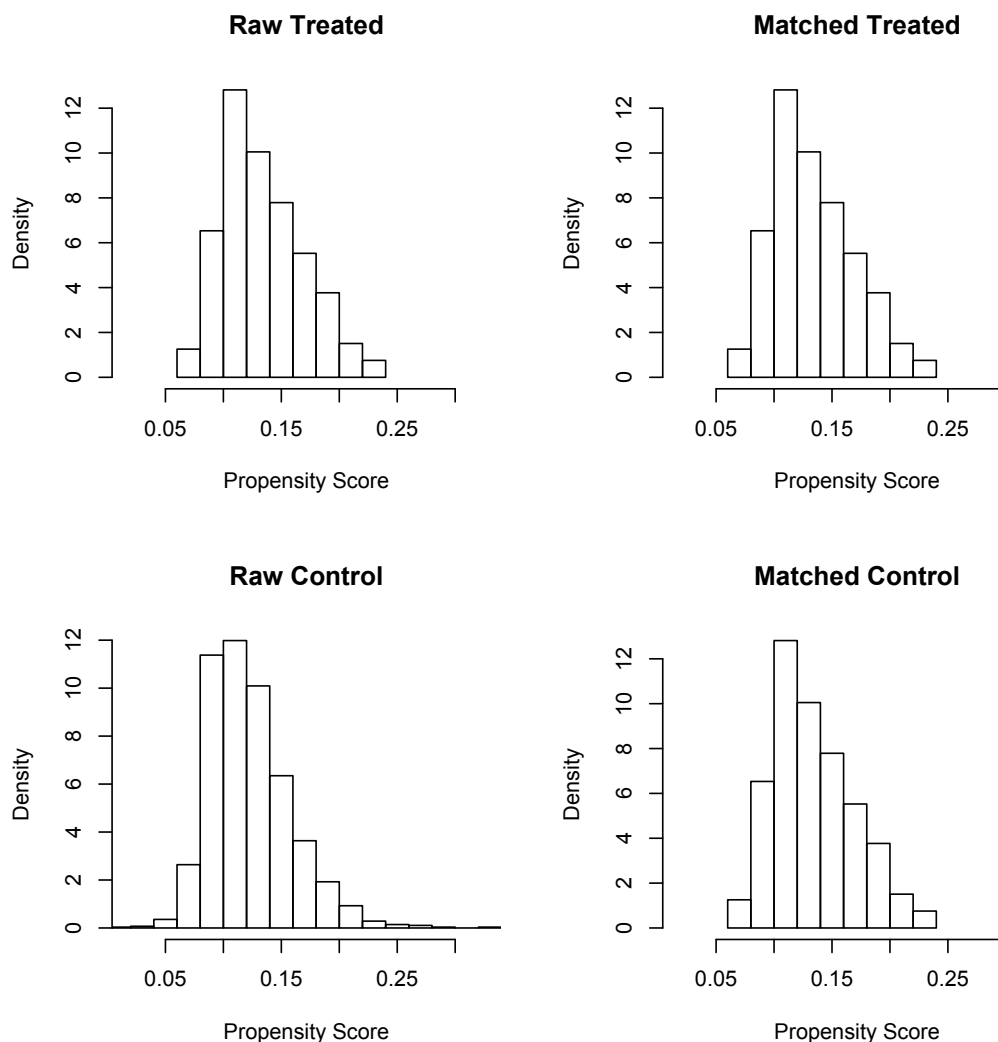


*These graphs show the distribution of propensity scores for the Court's defendants (the "Treated" graphs) and the NHTSA Retrospective Control Group (the "Control" graphs) before matching (the "Raw" graphs) and after matching (the "Matched" graphs). As can be seen, the two groups have very similar distributions of propensity scores after matching, indicating little difference between the characteristics of the two groups.

Matching the defendants in the three groups was done using the open-source statistical matching program MatchIt (Ho, Imai, King, and Stuart 2007, 2008). MatchIt takes whatever variables are chosen to represent the defendants's characteristics and creates a "propensity score" for each case. These scores are the rough equivalent of a weighted score for each case that combines their readings on the characteristics chosen. In other words, instead of exactly matching each case with another based on their characteristics—a very difficult thing to do even with much more data than we have here—MatchIt creates a composite score for all of each case's characteristics that is then used to match the defendants as closely as possible. Following

the results of NHTSA study and others, we matched defendants for the treatment and each of the control groups based on four characteristics: sex, race, age, and the number of prior substance abuse offenses.

Figure 3: Comparison of Raw and Matched Propensity Scores for
DUI/Drug Court of Troup County Defendants and State Court of Troup County Defendants*



*These graphs show the distribution of propensity scores for the Court's defendants (the "Treated" graphs) and the State Court of Troup County Defendants from 1999 to 2004 (the "Control" graphs), both before matching (the "Raw" graphs) and after matching (the "Matched" graphs). As might be expected given the greater number of State Court defendants, the distributions of the propensity scores of the two groups after matching are even closer than what was found for the "outside control" group.

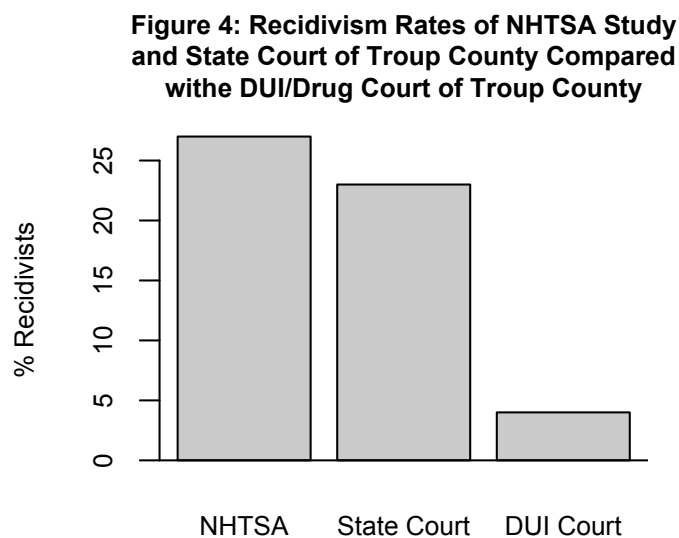
The results for the matching process for the "outside control" group are presented in Figure 2. This figure shows a set of histograms of propensity scores—i.e. bar graphs for different ranges of scores—both before matching and afterwards. The matching process discarded 86 of the NHTSA Retrospective Control Group

cases and matched the remaining 199 to the Court's defendants using their propensity scores. As can be seen, there is now less difference between the two distributions. In fact, the differences in the mean scores on sex, race, age, and prior offenses decreased substantially as a result of the matching process. (More complete results can be found in Table 1a in the Appendix to this report.) While there are still some differences between the two groups—it is virtually impossible to eliminate such variation when the number of cases in the groups is this small—we can now compare the two groups with some confidence.

The results for the matching process for the “inside control” group are presented in Figure 3. As with Figure 2, this presents a set of histograms of propensity scores both before matching and afterwards. The matching process discarded 1217 of the State Court of Troup County defendants, matching again the remaining 199 to the Court's defendants using their propensity scores. As can be seen, the two histograms are virtually identical as a result of the matching process. (Again, more complete results can be found in Table 2a in the Appendix to this report.)

The Court's Impact on Recidivism

Matching the defendants who have been processed by the Court to those of the two control groups is a vital first step in determining the impact of the Court on recidivism rates. It only provides the basis for the comparisons, however. We can now be sure that the Court's defendants and those in the control groups are quite similar in terms of sex, race, age, and prior convictions in substance abuse cases. Now we must make the actual comparisons themselves.

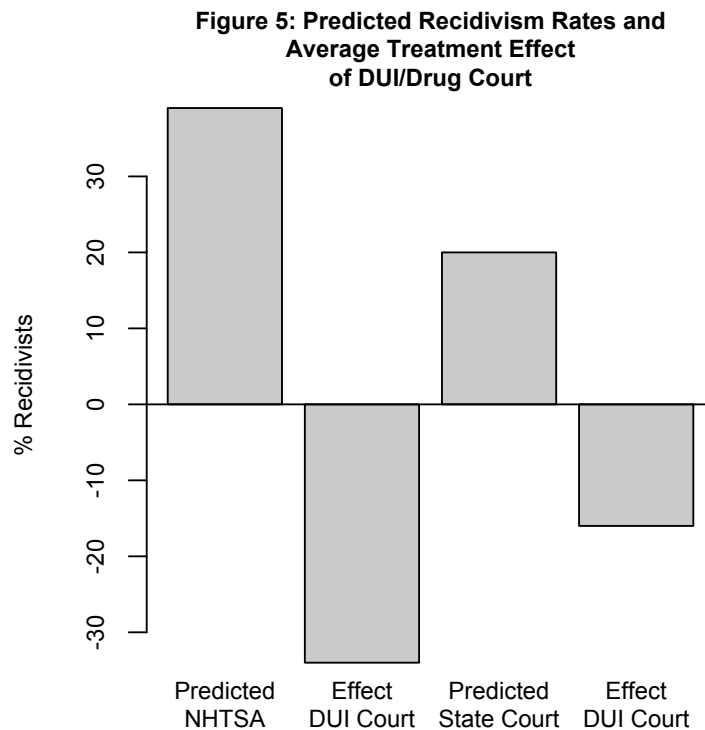


The most basic comparison can be found in Figure 4. As can be seen, the recidivism rate for the DUI/Drug Court defendants (4%) is much lower than what was found for the matched groups drawn from either the NHTSA Retrospective Control Group defendants (27%) or the State Court of Troup County defendants (23%) from before the establishment of the DUI/Drug Court. However, while impressive, these differences do not give us a clear measure of the actual reductions in recidivism achieved by putting multiple DUI defendants through the DUI/Drug Court program.

As was said before, we cannot re-run history. However, we can do the next best thing. We can use the characteristics of the defendants in the two control groups to predict recidivism rates. Since these defendants have been closely matched with the DUI/Drug Court defendants, we can use the predictions about recidivism we develop about these virtually identical defendants who were not processed by a DUI court as a means to predict how the DUI/Drug Court defendants would have behaved if they had not been referred. To put this another way, we can use those predictions to *simulate* what the recidivism rates for the DUI/Drug Court defendants *would have been if there was no DUI/Drug Court at all*.

We can do this because the matching procedure has insured that there is much less likelihood of influences other than the DUI/Drug Court's processes on the control group defendants and because recent advances in computerized statistical routines allow us to run a virtually unlimited number of similar simulations based on randomly drawn samples from the distribution of predicted recidivism for DUI/Drug Court defendants estimated by using weights from the matched samples of the two control groups. This is actually roughly similar to what is done in the usual random sampling used in surveys. Here, however, the goal is not to estimate what the recidivism rates are for the entire population of substance abuse defendants in Georgia—that is not necessary for our purposes here and we have not got the data to do it—but to estimate what the predicted effect on recidivism of *not going through the DUI/Drug Court program* would have been for the DUI/Drug Court defendants. Once we have done that, our course is easy: we compare the simulated prediction of recidivism for each defendant with whether they *actually* recidivated, find the difference, then calculate the average of these differences. That difference is the estimated effect on recidivism of being referred to the DUI/Drug Court (see Ho, Imai, King, and Stuart 2008 for a more complete explanation of these points).

Figure 5 shows the comparison we need to determine the average effect of the processes of the DUI/Drug Court. First, the recidivism rates we would have predicted for the DUI/Drug Court defendants if we had used the characteristics of the defendants in the NHTSA study ("Predicted NHTSA") or those of the State Court of Troup County ("Predicted State Court") are displayed. Based on estimates from 1000 simulations using the characteristics of defendants from both of the control groups, we would have predicted that the defendants in the DUI/Drug Court would have recidivated at around 39% using the NHTSA study and around 20% for the State Court defendants. The columns next to these predicted recidivism rates show the predicted average treatment effect for the DUI/Drug Court defendants ("Effect DUI Court"). These treatment effects are based on a calculation of what difference in recidivism rates we might *predict* for DUI/Drug Court defendants from a comparison of the predicted recidivism rates for each group and the *actual recidivism rates* of the defendants taken in by the court. In other words, the treatment effect is the difference between what we would have predicted if the DUI/Drug Court defendants had behaved like the NHTSA and State Court defendants and *how they actually behaved*. As can be seen, the results are interesting and substantial.



First, notice that the effects of being referred to the DUI/Drug Court are quite large when the NHTSA control group of defendants from Chatham, Clarke, and Hall Counties is used. As can be seen, if we use the characteristics of Retrospective Control Group to predict the recidivism of the DUI/Drug Court defendants, the predicted average treatment effects is substantial: a roughly 33% decrease in recidivism. Obviously, being referred to the DUI/Drug Court has reduced recidivism rates considerably.

The figures applying the characteristics of defendants processed by the State Court of Troup County to the DUI/Drug Court defendants are also impressive. If DUI/Drug Court defendants had been more like the State Court defendants processed before the DUI/Drug Court was established, almost 20% of them would have re-offended. At around -16%, the predicted average treatment effect rates are smaller than for the NHTSA study defendants, but are still substantial. This figure may be somewhat too low, however, because the recidivism rates for the State Court defendants used to predict rearrest are probably underestimated. For the DUI/Drug Court defendants we had extremely accurate figures for arrests subsequent to referral; the Court's administrator checks weekly for arrests with the local authorities. The State Court recidivism rates, however, were determined from records of arrests kept by the State Court. Records for these defendants were sometimes incomplete; i.e. arrests were reported, but no changing information was available for them. The

result is that there were probably some State Court defendants who were, in fact, re-arrested for DUI/VC/GSA violations, but existing records do not allow us to know for certain.¹

Conclusion

This study presents strong evidence that the DUI/Drug Court of Troup County has had a substantial effect on the recidivism rates of defendants referred to it. Carefully matched control groups were used to estimate recidivism rates for DUI/Drug Court defendants, allowing comparisons between the control groups and the DUI/Drug Court showing substantial differences in recidivism rates. These same data were used to estimate the actual treatment effects of being exposed to the Court's processes. The effects are even greater than might have been anticipated; recall that those defendants who were members of the control groups had been exposed to the usual penalties and interventions common to Georgia DUI and substance abuse offenders. The control defendants were put on probation, sent to DUI school, fined, paid restitution, and spent time in jail; it is not as if Georgia courts were not trying to effect their continuing problems. It is evident, however, that the DUI/Drug Court of Troup County has had a powerful role in reducing recidivism for substance abuse cases. There is strong evidence, in other words, that the Court's mission to break the cycle of substance abuse has been successful.

This is only the first of what is projected to be a series of studies that will complete this evaluation. We know now that the Court has a substantial effect on recidivism by substance abuse defendants. What we do not know, however, dwarfs this finding. How are the Court's processes leading to this result? What is the effect of the Court's interventions on defendants's behavior? How is the Court perceived by the defendants it processes and the community it serves? These and other important questions await further study.

¹ The actual formulas used to calculate the average predicted treatment effects can be found in Imai, King, and Lau (2008b). Table 3a in the Appendix shows readings for both expected and predicted average treatment effects and the 95% confidence limits for the estimated treatment effects using both matched groups. Readings for both estimated treatment effects appear to be quite stable.

Credits

The final report for this evaluation was written by Dr. Tracy Lightcap of the Department of Political Science at LaGrange College. Dr. Lightcap also conducted the matching analysis, calculated the effects mentioned in the report, and constructed the graphs portraying those effects.. However, the main tasks in completing this report—the data collection, dataset construction, and preliminary analysis of the relationships found in the data—were done by students in the Department of Political Science’s required research methods course over a three year period. Further, their presentations of analysis of the data they had collected and organized kept the court’s officials up to date on the preliminary results of the project and its progress. Their efforts were absolutely indispensable to the completion of this report, and they should be considered its co-authors. The students involved were:

Fall Semester 2008 (Dr. Lightcap):

Mark Belcher, Rose Burke, John Cox, Shane Currie, Elizabeth DeLoach, Neene Gichaara, Nina Glover, Casey Ishman, Wesley Meares, Krystie Miller, Shawnique Muller, Kacey Smith, Valaree Williams, Joseph Wowk, Sarah Wright.

2008 - 09 (Dr. Tures):

Derek Baldridge, Kayla Black, Jeremy Davis, Britt Gaylor, Eric Keels, Andrew Lowery, Heather Peake, Connie Russell, Morgan Shields, Trevor Tullock, Demetrice Tuttle.

Spring Semester 2009 (Dr. Lightcap):

Jeff Albertson, William Cody, Alexander Elorriaga, Nathan Jones, Lindley Morton, Jorge Uribe, Anthony Yacovazzi.

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APPENDIX

Table 1a*

Percent Improvement After Matching:		Sample sizes:		
	Mean Differences		Control	Treated
Sex	68.99%	All	285	199
Race	94.99%	Matched	199	199
Age	55.23%	Unmatched	86	0
Priors	55.77%	Discarded	0	0

*This table shows the percent improvement in the mean differences between the DUI/Drug Court's defendants and those of the NHTSA Retrospective Control Group and the total defendants matched and discarded.

Table 2a*

Percent Improvement After Matching:		Sample sizes:		
	Mean Differences		Control	Treated
Sex	81.88%	All	1402	199
Race	-974.33%	Matched	199	199
Age	93.77%	Unmatched	1203	0
Priors	86.31%	Discarded	0	0

*This table shows the percent improvement in the mean differences between the DUI/Drug Court's defendants and those from the State Court of Troup County and the total defendants matched and discarded. (The anomalous reading for race is a by product of the matching process; to get the substantial improvement for the other factors race was thrown off. In the initial balances the means for race-coded 1 for caucasians, 2 for African-Americans, and 3 for Hispanics-were 1.437 for the DUI/Drug Court defendants and 1.434 for the State Court defendants, very close indeed. After matching the respective means were 1.437 and 1.407. In short, a slight difference in the matched race of the State Court defendants led to a substantial decrease in the proportional differences. For further details about the matching procedure used here see Ho, Imai, King, and Stuart 2007 and 2008.

Table 3A: Expected and Predicted Recidivism Rates and Average Expected and Predicted Treatment Effects for DUI/Drug Court Defendants Using the Retrospective Control Group and State Court of Troup County Defendants*

If we use the NHTSA Retrospective Control Group to impute recidivism for DUI/Drug Court defendants, we get these results:

Expected Recidivism Rate	Predicted Recidivism Rate
.3874	.3886

Average Expected Treatment Effect for the DUI/Drug Court Defendants

mean	sd	2.5%	97.5%
-0.3371	0.0345	-0.4024	-0.2712

Average Predicted Treatment Effect for the DUI/Drug Court Defendants

mean	sd	2.5%	97.5%
-0.3383	0.0480	-0.4273	-0.2412

If we use the State Court of Troup County defendants to impute recidivism for DUI/Drug Court defendants, we get these results:

Expected Recidivism Rate	Predicted Recidivism Rate
.1956	.1960

Average Expected Treatment Effect for the DUI/Drug Court Defendants

mean	sd	2.5%	97.5%
-0.1554	0.0274	-0.2111	-0.10218

Average Predicted Treatment Effect for the DUI/Drug Court Defendants

mean	sd	2.5%	97.5%
-0.1557	0.0388	-0.2361	-0.08543

*Notice that there are standard deviations ("sd") and 95% confidence intervals (2.5% 97.5%) given for the treatment effects. The standard deviations give some indication of the spread of the figures (i.e. 99% of all the scores are within 3 standard deviations from the average). The confidence intervals can be read as the outside limits of the expected and predicted treatment effects. For example, we can be sure that 95 times out of 100 estimates drawn from different matching processes that the average expected treatment effect would be between -.40% and -.27% for the DUI/Drug Court Defendants if we used the NHTSA Retrospective Control Group to estimate what their recidivism rate would have been if had they not been referred to the DUI/Drug Court. This will give readers some idea of how variable the estimated effects are. For further details of how these calculations were performed, see Imai, King, and Lau 2008b.