Judicial Outcomes of Drunk Driving Cases as a Function of Quantity and Quality of Police Evidence

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Abstract

This archival study examined the court records and relevant police reports for 617 drunk driving cases drawn from the greater metropolitan areas of Boston, Denver, and Los Angeles. Cases included equal proportions of guilty pleas, guilty verdicts, and not-guilty verdicts. There was a fairly cohesive pattern of evidence relating blood alcohol readings to driving behavior before the stop, general behavior after the stop, and performance on the field sobriety tests. Despite some regional differences in arrest and detection procedures, case dispositions generally reflected a rational pattern of decision making in which drunk driving convictions were systematically influenced by the quantity and quality of evidence for guilt.

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As the severity of sanctions for drunk driving has increased in the United States, there has been an increased incentive to contest the evidence (National Institute of Justice, 1984). For example, after California introduced tougher laws in 1982, there was a sharp reduction in guilty pleas and an increase in jury trials, postponements, dismissals, and acquittals (Bloch & Aizenberg, 1985). In this context, police arrest reports have taken on new importance.

In principle, per se laws were intended to reduce the burden on police for collecting evidence, since blood alcohol over a specified level provides conclusive evidence for alcohol-impaired driving. In practice, per se evidence is "conclusive" only within a broader framework of credible procedures. Defense lawyers may attempt to raise "a reasonable doubt" about the meaning of BAC evidence by challenging the test procedures, the competency of testers, or even whether police had "probable cause" for testing a driver. One might reasonable expect supplementary evidence to strengthen the prosecutor's case, especially in states with no per se law or in cases where defendants refused to take any blood alcohol tests.

There are three levels of supplementary evidence that can be offered in support of (or in place of) BAC evidence: (1) driving behavior of the suspect before the stop; (2) general appearance and behavior of the driver immediately after the stop; and (3) the driver's performance on field sobriety tests.

Driving Behavior. The National Highway Traffic Safety Administration (1982) has disseminated a list of 20 standard cues for detecting intoxicated drivers on the road. One might expect that police observations of irregular driving would carry extra weight with jurors since, after all, the point of DUI laws is to control dangerous driving.

General Appearance and Behavior. In the brief moments after stopping the suspect, the officer must make a judgment whether more formal testing for intoxication is justified. A study of drivers in simulated sobriety checkpoints demonstrated that officers could successfully discriminate level of intoxication on a set of items including odor of alcohol, speech slurred, poor coordination, and clothes disheveled (Compton, 1985).

Field Sobriety Tests. Considerable research has been devoted to the development of valid field sobriety tests. Laboratory and field testing has demonstrated the validity of various tests including the walk-and-turn test, one-leg stand, and gaze nystagmus (Anderson, Schweitz, & Snyder, 1983; Tharp, Burns, & Moskowitz, 1981).

Research Issues

The present study was designed to explore four aspects of the criminal justice process for drunk driving. First, how do police officers in widely separated parts of the country differ in approaches that they take to drunk driving arrests? Second, how coherent or internally consistent are the various types of evidence presented in police reports? Third, is stronger evidence or more evidence associated with more guilty pleas and guilty verdicts? Fourth, are differences between state per se laws reflected in the relationships between BAC levels and conviction rates?

METHODS

Drunk driving cases were selected from courts in three metropolitan areas: 246 cases from Los Angeles, 157 cases from Denver, and 214 cases from Boston. The total sample of 617 cases included 203 "not guilty" jury verdicts, 203 "guilty" verdicts, and 211 guilty pleas. From case narratives coders extracted information on any of the 20 standard visual detection cues

before the stop, 13 attributes of general appearance and behavior after the stop, and up to 7 field sobriety tests.

In a test of inter-rater reliability for 37 cases, the percentage of agreement for the occurrence versus nonoccurrence of particular items of evidence ranged from 73% to 100% with a mean around 90%. Because many of the items have either a very high or a very low base rate, the percentage of agreement is inflated by chance. A much better indicator of the difficulty in objectively coding such open-ended case materials is the Pearson correlation coefficients comparing raters on composite scores for key scales. These correlations ranged from .43 for the finger-to-nose test to .87 for the gaze nystagmus test. Thus, when we test hypotheses about the strength of evidence (as opposed to the mere presence of evidence) it is important to remember that the independent variables are forced to swim against the current of considerable statistical noise.

RESULTS

Types of evidence available. As shown in Table 1, it appears that accident involvement drew police attention to drunk driving suspects in about one-third of the cases in Denver and Boston, and about one-tenth of the cases in Los Angeles. Significantly more of the Los Angeles cases were spotted by means of one of the standard visual detection cues, while significantly more of the Boston cases were detected in the course of other types of traffic violations, such as speeding. Other than a few cases in Boston, all cases contained some description of the suspect immediately following the stop. Officers in Los Angeles were most likely to administer a field sobriety test (92%), followed by Denver (82%) and Boston ((63%). Similarly, police in Boston secured a chemical test of the suspect's blood for only 40% of the

cases compared to 67% in Denver and 75% in Los Angeles.

The most frequent visual detection cue in all three cities was "weaving," and overall the five most frequent cues all pertained to the driver's ability to maintain a steady course. Attempts to construct cohesive subscales around themes like "maintaining a steady course" were not sucessful since cues did not appear together consistently. For cases where any cues were recorded, Los Angeles police reported more cues (2.2) than Denver or Boston police (both 1.7). Los Angeles police were especially likely to report "straddling," "drifting," or "slow speed."

Following the stop, almost all suspects were described as having alcohol on their breath, and the great majority were reported to have bloodshot or watery eyes and slurred speech. In general, problems of physical coordination were much more commonly reported than problems of cognitive confusion. More descriptive terms were noted in the cases from Los Angeles and Denver (both 4.5) than from Boston (3.5). Boston area police were less likely to use the standard descriptors pertaining to breath, eyes, and speech. Boston police almost never described a suspect as being flushed or pale, while almost half of the Denver suspects carried this tag.

Among suspects who received <u>any</u> sobriety tests, Los Angeles police administered the most tests (3.3) followed by Denver (2.5) and Boston (1.6). All three areas made heavy use of the walk-and-turn test, along with a second test that was a "speciality" of the area, e.g., the one-leg test in Los Angeles, the sway test in Denver, and the alphabet test in Boston.

Some form of BAC was given to 375 suspects. Three tests predicted subsequent BAC readings with fair consistency across the three research sites: walk-and-turn, one-leg, and sway. Four other tests showed little relationship

with BAC: finger-to-nose, alphabet, gaze-nystagamus, and finger-touching.

Relationship of Police Evidence to Case Outcomes

If we have succeeded in measuring the forms of evidence that are relevant to the drunk driving laws and if the judicial system is rational, then we should find that more evidence is better than less evidence in yielding convictions. Overall, the proportion of "guilty plea" cases increased as a function of BAC level while the proportion of "not guilty" decreased. The proportion of "found guilty" remained relatively flat across BAC levels over .10%. A similar pattern was found in each of the three metropolitan areas.

For some further analyses, the three judicial outcomes were assigned the values "not guilty" = 1, "found guilty" = 2, and "guilty plea" = 3. Although this outcome variable is not strictly an interval scale, it provides a convenient index for summarizing a mass of relationships. As shown in Table 2, convictions were more likely to occur among cases that reported at least one visual detection cue and a BAC test. The judicial outcome also was positively related to the average sobriety test score and the blood alcohol level.

Multiple regression analysis was used to test the independent contributions to the judicial outcome for the various types of evidence in the order in which they were gathered by the arresting officer. The results for combined cases demonstrated significant positive effects for the presence of visual detection cues and BAC tests and the strength of evidence from the field sobriety tests and BAC tests. A significant interaction indicated that the combination of "any" BAC evidence and "any" sobriety test was especially likely to lead to conviction. A log-linear analysis verified the highly significant effects ($p<.001$) of DUI cues and BAC tests and the interaction

between sobriety tests and BAC tests in predicting judicial outcomes.

The general pattern of the regression analysis was found in Los Angeles and Denver, with the exception that there was no affect of mean sobriety test scores in Denver. In Boston, only the presence of visual detection cues and the strength of BAC evidence contributed significantly to the regression. Further analysis with combined cases showed no additional contribution of the suspect's sex, minority status, DUI priors, or type of defense attorney.

The effect of state laws. There was some indication that the relationship between evidence and judicial outcomes varied between the cities consistent with differences in state laws. Conviction rates for cases with BAC levels below .10% were higher in Denver than in Boston, consistent with the lower presumptive level of .05% in Colorado. Los Angeles had only one case with a BAC reading below .10%. There were no differences between cities in conviction rates for cases with BAC readings in the range from .10% to .15%. Thus, there was no support for a differential effect of California's per se limit of .10%.

DISCUSSION

As we interpret our results, it is important to recognize that we cannot rule out the possibility that apparent differences between cities were really due to differences in completeness of the court records. We were also limited by problems with low inter-rater reliability in coding some aspects of the case narratives. We should note that it is not possible to compare conviction rates for the approaches taken by the different cities since the samples were chosen to have equal proportions of "not guilty," "guilty," and "guilty plea" cases. Further, the police reports did not encompass extenuating circumstances nor points of disagreement with the report as presented by the

defense attorneys. Finally, we were dealing with a compressed range of BAC in that we had no sober drivers in the sample. The study attempted to discriminate levels of intoxication among drivers who showed sufficient signs of impairment to merit arrest and prosecution. Thus the low level of relationships between BAC and the occurence of a number of DUI cues does not necessarily mean the cues are not useful for distinguishing intoxicated drivers from nonintoxicated drivers; all of the drivers in the current sample were intoxicated to some degree.

The correlations between BAC and certain sobriety test scores were statistically significant and consistent across cities, while others, notably the finger-to-nose and gaze-nystagamus tests, were weak and erratic. To avoid a possible misunderstanding of these latter findings, it should be recalled that this research was not designed to validate the administration of the field sobriety tests, but to validate the accuracy and completeness of the reports on the sobriety tests. For example, the validity of the gaze-nystagamus test as a behavioral index of intoxication is not in question, for laboratory and field studies have demonstrated this measure to be one of the most sensitive predictors of blood alcohol level (Tharp, 1981). The problem with the gaze-nystagamus test in the present research seems to be that officers usually did not describe the results in the technical terms that fit our scale (e.g., lack of smooth tracking, onset when tracking to extreme angles, and onset before 45 degrees). Instead, the results were often described in such vague terms as "did not respond well" to the nystagamus test. On the other hand, when we examined the 54 cases in our sample that included angle of onset of nystagamus, the correlation with BAC was significant and in the expected direction: $r = -.26$, $p<.05$, one-tailed.

There are four types of evidence that might be reported from the separate phases of a drunk driving arrest: irregular driving before the stop, drunken appearance after the stop, poor performance on field sobriety tests, and illegal levels of blood alcohol. We anticipated that existence of each form of evidence would add weight to the case for conviction, and cases with stronger evidence for guilt would more likely be found among those actually convicted. In fact, four categories of evidence served to predict case disposition with reasonable consistency and independence: the existence of DUI cues, the strength of sobriety test evidence, and the existence and strength of BAC evidence. The combination of sobriety test information and BAC evidence was especially likely to be associated with conviction in Los Angeles and Denver. The Boston findings were distinctive in some repects. Given that Massachusetts does not have a per se law, it is understandable that convictions might be obtained with or without the presence of BAC evidence. However, contrary to expectations we did not find an increased use of field tests to fill the gap. Furthermore, we were surprised to discover that in those Boston cases where BAC evidence was present, the level of BAC was highly influential in determining case outcomes. This receptiveness to BAC evidence may indicate that Massachusetts is "ripe" for per se legislation.

By combining the data from the two per se states, California and Colorado, the importance of having any BAC evidence becomes clearer. BAC evidence was available for 88% of the guilty-plea cases, for 69% of the guilty-verdict cases, and for only 55% of the not-guilty-verdict cases. Considering the power of BAC evidence in determining case dispositions, legislative bodies should verify that the cost of refusing a blood test is sufficiently strong relative to the cost of a DUI conviction so that refusals

do not undermine the per se laws. On the other hand, in the interest of credibility and justice to the accused, police agencies must also take pains to assure the reliability of their BAC readings.

In conclusion, the results of this investigation into court processing of DUI defendants were reassuring in three general repects. First, despite methodological obstacles in the objective coding of narrative materials, there appeared to be a basic integrity of the police reports as shown by the cohesive relationship of blood alcohol measures to accieent reports, behavioral descriptions, and field sobriety tests. Second, the results reflected an underlying "rationality" of the judicial system in being guided by the decision rules inherent in state laws and in judicial reliance upon evidence in determining case dispositions. And, third, when other key variables were held constant, case disposition was not affected by such auxiliary variables as the defendant's gender, minority status, DUI priors, or type of defense attorney.

REFERENCES

Anderson, T. E., Schweitz, R. M., & Snyder, M. B. (1983). Field evaluation of a behavioral test battery for DWI. Washington, DC: National Highway Traffic Safety Administration.

Bloch, S. A., & Aizenberg, R. A. (1985). The effects of tough drinking and driving laws: An examination of the judicial and traffic safety experience of California. Paper presented at the annual meeting of the Academy of Criminal Justice Sciences, Las Vegas, NV, April, 1985.

Compton, R. P. (1985). Pilot test of selected DWI detection procedures for use a sobriety checkpoints. Washington, DC: National Highway Traffic Safety Administration.

National Highway Traffic Safety Administration (1982). Preliminary breath testing for drinking-driving enforcement: Instructor's manual. Washington, DC: U.S. Department of Transportation.

National Institute of Justice (1984). Jailing drunk drivers. Washington, DC: U.S. Department of Justice.

Tharp, V. K. (1981). Gaze nystagamus as a roadside sobriety test. Abstracts and Reviews in Alcohol and Driving. 2, 5-8.

Tharp, V., Burns, M., & Moskowitz, H. (1981). Development and field test of psychophysical tests for DWI arrest. Washington, DC: National Highway Traffic Safety Administration.

Table 1

Types of Evidence Recorded in Cases from Los Angeles, Denver, and Boston

	Percentage of Cases				Chi Square Contrasts		
	All Cases	Los Angeles	Denver	Boston	LA-Den	LA-Bos	Den-Bos
(n)	(617)	(246)	(157)	(214)			
Pre-Stop Evidence:							
Accident occurrence	23	13	30	30	***	***	
One or more DUI cues	55	69	48	43	***	***	
One or more violation	39	35	29	51		***	***
Post-Stop Evidence:							
One or more general behaviors	99	100	100	97		**	*
One or more sobriety tests	79	92	82	63	**	***	***
One or more measures of BAC	61	75	67	40		***	***

* $p<.05$ ** $p<.01$ *** $p<.001$

Table 2

The Relationship Between Evidence and Case Outcomes

	Pearson Product Moment Correlation Coefficients			
	All Cases	Los Angeles	Denver	Boston
Existence of Evidence				
(Sample Size)	(595)	(226)	(155)	(214)
Any accident	-.05	-.08	-.05	-.02
Any standard DUI cue	.17***	.14*	.17*	.18*
Any sobriety test	.08	.04	.12	.07
Any BAC test	.18***	.32***	.27***	-.01
Strength of Evidence				
Accident severity	.11 (143)	.02 (32)	.21 (47)	.08 (64)
Sum of DUI cues	-.00 (323)	-.06 (155)	.20* (76)	-.05 (92)
Average sobriety test score	.11** (470)	.17*** (209)	.00 (127)	.14* (134)
Average BAC (four-step scale)	.33*** (360)	.24*** (171)	.27** (103)	.51*** (86)

*p<.05 **p<.01 ***p<.001, one-tailed tests

Note: The outcome variable was a three-point scale, where 1 = "not guilty," 2 = "found guilty," and 3 = "guilty plea."