Statistical Tools Employed in Legal Settings

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Abstract

The role of a statistician working in a legal setting requires careful attention to data, methodology, and conclusions. Cooperation with the litigator and communication to the trier of fact are key in determining whether statistical evidence will be admitted and be effective in the variety of legal contexts in which it plays an important role. Guidelines for forensic statistics and examples of past uses and thoughts about the future are presented.

Keywords: law, forensics, methodology

For the rational study of the law the black letter man may be the man of the present, but the man of the future is the man [woman] of statistics and the master of economics.

Oliver Wendell Holmes
The Path of the Law (1897)

Statistics have been used in legal settings in U.S. courts for well over one hundred years. In *Yick Wo v. Hopkins* (1886), the Supreme Court noted that statistics showed that not a single permit to operate a laundry had been issued to a San Francisco resident of Chinese ethnic origin although many had been issued to whites. *Baker v. Carr* (1962) used statistical evidence to establish the principle of "one man, one vote." The concept of "disparate impact" introduced the use of statistics to show that facially neutral employment requirements could be used to discriminate in *Griggs v. Duke Power Company* (1971). Legend has it that statistical significance was introduced into deliberations by a former physicist who was serving as a Supreme Court clerk, first in *Castenada v. Partida* (1977), a death penalty case, and then in *Hazelwood School District v. United States* (1977), an employment case.

Although DNA evidence has come to be decisive, particularly in freeing long-serving prisoners through efforts of such groups as the "Innocence Project," when it first received widespread public attention in the O.J. Simpson trial it tended to inspire widespread defection from the TV audience—with resultant peaks in water usage.

1. Preparation

The appropriate employment of statistics in a legal setting requires an effective partnership of the statistician and the lawyer. The role of the statistician is

- To present the evidence clearly and ethically
- To prepare the litigator to deal with statistical evidence.

However, there are certain cautions that the statistician must observe:

- Legal proceedings are *adversarial*—there are likely to be two quite different interpretations of the evidence, both presented by statisticians.
- Expert testimony cannot reach legal conclusions—the statistician can say, for example, that there is a statistically significant difference between the salaries of men and women unexplained by legitimate factors in the model but cannot say that there is discrimination.
- Early involvement is essential—if the statistician has no input into data gathering, (s)he is likely to be faced with a "garbage in, garbage out" situation.
- Statisticians bear responsibility for the methods they use and the conclusions they reach.
- Statisticians can and should be held accountable for their work.
- Because of the nature of their role in adversarial legal settings, it is essential that statisticians carefully guard their reputations.
- Statisticians are experts, not advocates.
- It is important that statisticians not allow unrealistic expectations of what they can accomplish.

There needs to be a clear understanding of what the statistician can and is expected to do. This begins with being certain that the statistician understands exactly what questions must be

answered. Only then is it possible to know what data are needed; the importance of the relevant data needs to be conveyed to the lawyers on the case. Getting the data can be a major problem, often requiring extensive back and forth between lawyers on both sides, often culminating in court intervention. Once the data have been obtained (to the extent possible), a lot of cleaning and grappling with the extent and form of the data are inevitably going to be necessary. Important to keep in mind is consideration of the strategy of the opposition. Be prepared to look at alternate methods and interpretations.

2. Communication

Not only must statisticians communicate with the lawyers as to the need for data, the limitations of statistical analysis, and possible problems, but they must exercise care in meeting a broader responsibility. Statisticians should attempt to promote and preserve the confidence of the public without exaggerating the accuracy or explanatory power of their data and methodology. In serving as experts they should provide adequate information to permit their methods, procedures, techniques, and findings to be assessed. Statisticians should not promise more than they can deliver and not allow themselves to be pushed to reach conclusions that they cannot support. Important in carrying out this responsibility is to address rather than minimize uncertainty.

Recent headlines have highlighted ethical concerns arising from actions of statisticians or those with whom they work. For example,

"Vioxx Kept Trial Going in Spite of Concern"

"Heart Deaths Concealed?"

"US Scientists Say They are Told to Alter Findings"

"FDA Employee Seeks Help from Whistle Blowers Group"

"CDC Study Overstated Obesity as a Cause of Death"

"EPA Inspector Finds Mercury Proposal Biased"

"Abuses Endangered Veterans in Cancer Drug Experiments"

"Alarm over Single AIDS Case Is Challenged by Questioners"

3. Missteps in the Use of Statistics in Litigation

The classic case of the misuse of statistics dates back to *People v. Collins* (1968). An elderly woman was mugged in an alley in Los Angeles. Eyewitness testimony reported that a black man with a beard and mustache and a blond woman with a pony tale drove away from the scene of the crime in a partly yellow automobile. This led to the arrest of Janet and Malcolm Collins. Ms. Collins was blond, with hair long enough to be worn in a pony tail; Mr. Collins was black, with a mustache and a beard recently shaved off. Their car was partly yellow. At the trial the prosecutor called a mathematician as a witness and posed the following probabilities (expert witnesses, unlike fact witnesses, are permitted to testify about hypotheticals):

	Probability
Partly yellow automobile	1/10
Man with mustache	1/4
Woman with ponytail	1/10
Blond woman	1/3
Black man with beard	1/10
Interracial couple in a car	1/1000

He continued by asking "Is it not the case that the probability of several independent events is obtained by multiplying their individual probabilities?" To the witness's "But, but …." The prosecutor said "Just answer the question." Multiplying yields,

Probability:
(1/10)x(1/4)x(1/10)x(1/3)x(1/10)x(1x1000) =
1/12,000,000

Finally, the prosecutor asserted that since the population of metropolitan Los Angeles was 12,000,000 there could be only one couple with the listed characteristics, namely Janet and Malcolm Collins. Unfortunately, there was no rebuttal statistical testimony to that which was instrumental in convicting them. Janet had no prior record and was sentenced merely to probation, but Malcolm had a prior conviction and spent 18 months in prison before the case came up on appeal.

The incorrectly assumed independence was not, of course, the only problem with the prosecution's case. In a Poisson distribution,

p(more than one given at least one) =
p(more than one)/p(at least one)

p(more than one) = 1 – p(0) – p(1)
= 1 – 1/e – 1/e
= .26
p(at least one) = 1 – p(0)
= 1 – 1/e
= .63

p(more than one given at least one)
= .26/.63
= .43

This is hardly "beyond a reasonable doubt," the standard required for conviction in criminal cases.

In a "cot death" (SIDS, Sudden Infant Death Syndrome) case in England a physician who had testified several times in similar cases asserted that the probability of a "cot death" in the population from which the defendant came was one in 8500. In the case at the bar a mother was being tried for the death of a second of her children with this diagnosis. The "expert" computed:

1/8500 x 1/8500 = 1/72,250,000,

where 72,250,000 is more than the total population of England. This time the Royal Statistical Society got wind of the testimony and objected that the events were not independent since evidence existed of genetic and behavioral factors indicating otherwise. In overturning the conviction, the Court noted that the physician had no evidence for the testimony he presented; he was "struck off" the registry of physicians. Several other convictions involving the same physician have been voided and over 250 murder convictions in "cot death" cases are being reviewed.

In *Maryland v. Wilson* (2002), the father of two children who died of SIDS was convicted of murder of the second partly on the basis of similar testimony, although the faulty statistics of the expert testifying for the prosecution produced only a probability of 1 in 4 million. The prosecution's putative probability was further reduced by the presence of another factor observed in the autopsy. Finally the prosecutor told the jury "If you multiply his numbers, instead of 1 in 4 million, you get 1 in 10 million that the man sitting here is innocent. That was what a doctor, their expert, told you." Clearly this goes beyond the problem with multiplying non-independent probabilities. The defense counsel's motion for a mistrial was denied and, instead, the court merely gave a curative instruction. Wilson was convicted and spent two years in prison before the conviction was overturned explicitly because of the misuse of statistics.

Two cases currently before the U.S. Supreme Court are on appeal from decisions in which the courts below refused to be misled by the misuse of statistics, but the distortion may well be brought up once again in oral argument. *Gonzales v. Carhart* and *Gonzales v. Planned Parenthood* involved state regulation of "partial birth abortions" with the states relying in part on a misinterpretation of the *Chasen* study (2004). In the study the null hypothesis was that two different procedures led to the same rate of subsequent premature births, with the evidence resulting in a probability of $p = 0.30$. However, the government's expert testified that 30% is just "stretching it a little bit" from 5% and "There is a 30 percent chance this occurred by chance and a 70 percent chance that it in fact is a true, meaningful, increased risk." An *amicus* brief by a group of statisticians attempts to convince the Supreme Court of the error of this interpretation.

4. Evidentiary Standards

U.S. Federal Evidence Rule 702 states:

If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, if

(1) the testimony is based upon sufficient factors or data
(2) the testimony is the product of reliable principles and methods, and
(3) the witness has applied the principles and methods reliably to the facts of the case.

In the early 1900's the "Commercial Marketplace Test," that is, that the testimony would be accepted in the marketplace, determined whether testimony was sufficiently reliable to be admitted. The *Frye v. United States* (1923) decision required that expert testimony be "generally accepted," which usually was interpreted to mean peer-reviewed.

In *Daubert v. Merrell Dow Pharmaceuticals* (1993) the Supreme Court declared that judges must evaluate the methodology of expert testimony according to the following:

- Testing and validation
- Peer review
- Existence and maintenance of standards
- Controlling the use of the technique
- Rate of error
- "General acceptance"

Subsequently *Joiner v. General Electric* (1997) and *Kuhmo v. Carmichael* (1999) further clarified the role of the judge by extending it to evaluating the way methodology is applied and expanded the definition of who is an expert.

5. Scope of the Use of Statistics in Legal Settings

Some of the cases in which statistics have been used include:

Discrimination (race, sex, age, etc.)
Anti-trust
Pipeline regulation
Epidemiology
Police profiling
Driving offenses
Assaults on prisoners
Redistricting
SIDS
DNA
Human rights violations
Death penalty
Service interruption
Sales figures
Lotteries
Intellectual property
Drug trials
Sentencing
Evidence-based medicine
Recidivism
Environment
Bullet composition
Clinical trials
Product liability
Glass fragments
Earprints

In any of these situations, there are certain keys to effective statistical evidence:

- Use of comparative data—it doesn't help to know that only 10% of those promoted were women if we don't know what percent of the eligible pool were women and what in both cases the absolute numbers were. A case involving the National Security Agency was once settled out of court because the agency refused to provide any actual numbers of employees, only percentages.
- Adequate sample size—courts generally want to hear about statistical significance so power is always a concern.
- Clarity of presentation—think of it as teaching an elementary statistics class.
- Supplemental anecdotal evidence—for some decision-makers real people are more convincing than numbers.
- Control by the expert—the statistician has to formulate the presentation of evidence.
- In order to follow up and to question opposing experts the litigator has to understand the statistical evidence and the statistician needs to make sure that (s)he does.

6. Discrimination

One of the fields of litigation where statistics play a big role is discrimination—in employment, education, housing, voting, jury selection, arrests, and sentencing, among other areas. Under most federal and state laws, two forms of discrimination are illegal:

Disparate treatment — similarly situated individuals are treated differently on the basis of race, sex, etc.

Disparate impact — a facially neutral criterion or process has a disparate impact on members of one sex, race, etc.

How do we use statistics to determine how "disparate" an impact must be? If one group is totally excluded—the inexorable zero—courts have generally concluded that something other than chance is in play, as in the seminal *Yick Wo* case. Another approach is to look at differences in percentages; for example, if the success percentage for one group is, say 10%, how large must it be for the other group in order to indicate disparate impact? Without any consideration of the size of the groups, this analysis is clearly not

very informative. The 4/5's rule has been popular with U.S. government regulators, applied either to the selection ratios or the odds ratios of the less-favored over the favored group with the conclusion that the impact is disparate if the ratio falls below 4/5. Again, the rule has been utilized without regard to the sample sizes.

As noted above, eventually the concept of statistical significance achieved Supreme Court recognition. Unfortunately, the standard enunciated was that a difference of "two or three standard deviations," with no apparent clarification of the substantial difference between the two benchmarks, indicated a result unlikely to be due to chance. This ambiguity has persisted with lower courts adopting one or the other or something in between or asserting that the context must be considered, with no "bright line" determination of what constitutes "disparate" impact.

How the application of statistical analysis might have changed early jury-discrimination decisions where the court relied on differences in percentages is illuminating. In *Swain v. Alabama* (1965) the percentage of minorities in the pool was 26% whereas the percentage of minorities on the jury panels was 16%. The court said that a 10% difference was not enough to consider that the Constitutional provision providing for juries of one's peers had been violated. However, the probability of such a disparity, given the numbers involved, is one in 10^8. On the other hand in *Avery v. Georgia* (1953) a disparity of 5% v. 0%, with a *p*-value of .046 was found to indicate discrimination. Here the inexorable zero was in play plus consideration of the way the jury panels were selected. Names were drawn from a fishbowl where names of white eligible candidates were written on white slips of paper and names of black eligible candidates were written on yellow slips of paper.

A setting where the standard of differences in percentages has been routinely applied is sex discrimination in education, as outlawed by Title IX of the Education Act of 1972. College athletics is an area where a certain amount of segregation by sex is allowed. However, Title IX requires that

- Opportunities be provided to men and women in numbers substantially proportionate to their respective enrollments

or

- History and continuing policies of program expansion be demonstrated

or

- Interests and abilities of the underrepresented sex be effectively accommodated

Because colleges and universities can rarely satisfy the second or third provision,[1] attention has focused on the first, hinging on the meaning of "substantially proportionate." Various cases determined that a range of differences in proportions did or did not satisfy the requirement. In *Cohen v. Brown University* (1995) the percentage of women among students was 51% whereas their percentage among athletes was 39%. The court concluded that the 12% difference was too large for "substantial proportionality" but failed to cite the statistical analysis provided in the evidence that showed a probability of less than 0.001 that the result would have occurred by chance.[2] A ratio of the proportions of .39/.51 or of the selection rates .12/.20 would fall below the U.S. Department of Education 4/5 cutoff.

7. Methodology

Although we have discussed a limited range of methodologies here, many different techniques have found their way into court, such as

Descriptive statistics
Mantel-Haenszel
t-tests
Change point analysis
Non-parametric tests
Urn models
Matched pairs
Lorenz curve
Gini index of inequality

[1] A recent ruling by the U.S. Department of Education would allow institutions much more latitude in showing compliance with the third provision by, for example, conducting an online poll of student interests. This has yet to be tested in the courts.

[2] In *Roberts v. Colorado State Board of Agriculture* (1993) the court relied on the fact that a 10.5% discrepancy produced a *p* value of less than 0.001 in finding that the university failed to achieve substantial proportionality.

Meta-analysis
Capture-recapture methods
Regression
Multiple systems estimation
Power considerations
Bayesian methods
Sensitivity analysis
Sampling considerations

Not all techniques have been well-received by the courts.

The idea of using probability took some time to take root as we have seen. However, there are still gaps in understanding the interpretation of "p," and the meaning of "reject the null hypothesis." Although regression is widely used in discrimination, anti-trust and other contexts, parties, and as a result the courts, are often not scrupulous about checking to see whether assumptions are met. The use of Bayesian techniques was first proposed around 1970,[3] but is still not generally accepted although statisticians keep trying.[4]

Courts have frequently had problems with sampling, often treating populations as samples and conversely. The Supreme Court determined that the U.S. Constitution requires an "actual count" for the decennial census rather than the use of post-census adjustments based on sampling that might improve the accuracy. Other sampling questions involve whether estimates based on sampling can be used in drug cases where quantity determines the sentence or whether damages in intellectual property or other cases can be based on sampling.

8. Where next?

In recent years statistical evidence has been used to challenge such orthodoxies as the uniqueness of fingerprints and the matching of bullets through composition analysis. Improved techniques in DNA analysis have resulted in the release of many who were improperly convicted. Statistical analyses have also led to a reconsideration of whether lie detector evidence is sufficiently reliable to be accepted in court.

Although statistics have played a role in the release of defendants on death row, statistical evidence about racial disparities in the imposition of the death penalty has not been accepted as evidence of Constitutional violations. However, the Supreme Court's view of the death penalty has been changing since *McCleskey v. Kemp* (1987), where the court said that evidence that the race of the victim played a statistically significant role in determination of the sentence was not relevant to the sentience imposed in a particular case. Perhaps with this evolving jurisprudence statistical evidence will come to be viewed with more respect at least in death penalty cases.[5]

[3]Finkelstein, M.O., and Fairley, W.B. (1970), "A Bayesian approach to identification evidence," Harvard Law Review, vol. 83, p. 489.

[4]Balding, D.J. (1998), "Court condemns Bayes," Royal Statistical Society, vol.25, pp. 1-2; Dawid, A.P., Mortera, J., and Vicard, P. (2005), "Building blocks for DNA identification from Bayesian networks," 6th International Conference on Forensic Statistics;. Little, R.J. (2006), "Calibrated Bayes: A Bayes/Frequentist Roadmap," The American Statistician, vol. 60, pp. 213-223; Barnes, K. (2005), "A Bayesian model to control for selection bias, with an application to racial profiling,", 6th International Conference on Forensic Statistics.

[5] In dissent in *Callins v. Collins,* 510 U.S. 114 (1994) Justice Blackmun said: "From this day forward, I no longer shall tinker with the machinery of death. … Rather than continue to coddle the Court's delusion that the desired level of fairness has been achieved and the need for regulation eviscerated, I feel morally and intellectually obligated simply to concede that the death penalty experiment has failed. It is virtually self-evident to me now that no combination of procedural rules or substantive regulations ever can save the death penalty from its inherent constitutional deficiencies. The basic question -- does the system accurately and consistently determine which defendants "deserve" to die? -- cannot be answered in the affirmative. …The problem is that the inevitability of factual, legal, and moral error gives us a system that we know must wrongly kill some defendants, a system that fails to deliver the fair, consistent, and reliable sentences of death required by the Constitution. See also Liebman, J.S., *et al* (2000). *A Broken System: Error Rates in Capital Cases.* New York: Columbia School of Law and Finkelstein,

Areas where statistics are increasingly being used include environmental law,[6] finance,[7] and human rights.[8]

9. Conclusion

Statistical evidence has played, and will continue to play, an important role in the pursuit of justice. Close cooperation and assumption of responsibility and accountability on the part of the litigators and statisticians is required in order to assure accuracy, fairness, and effectiveness.

References

Avery v. Georgia, 345 U.S. 559 (1953).

Baker v. Carr, 369 U.S. 186 (1962).

Balding, D.J. (1998), "Court condemns Bayes," Royal Statistical Society, vol.25, pp. 1-2.

Ball, P., and Asher, J. (2002), "Statistics and Slobodan: Using data analysis and statistics in the War Crimes Trial of former president Milosevic," Chance, vol. 15, pp. 17-24.

Barnes, K. (2005), "A Bayesian model to control for selection bias, with an application to racial profiling,", 6th International Conference on Forensic Statistics.

Bura, E., Gastwirth, J.L., and Modarres, R. (2005), "Statistical methods for assessing the fairness of the allocation of shares in initial public offerings," Law, Probability and Risk, vol. 4, pp. 143-158.

Callins v. Collins, 510 U.S. 114 (1994).

Castenada v. Partida, 430 U.S. 482 (1977).

Chasen, S.T. (2004). **"**Dilation and evacuation at ≥ 20 weeks: Comparison of operative techniques," American Journal of Obstetrics and Gynecology, vol. 190, p.1180**.**

Cohen v. Brown University, 101 F. 3d 155 (1st Cir. 1996).

Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993).

Dawid, A.P., Mortera, J., and Vicard, P. (2005), "Building blocks for DNA identification from Bayesian networks," 6th International Conference on Forensic Statistics.

DeGroot, M., Fienberg, S. and Kadane, J.B. (1986). S*tatistics and the Law*. New York: Wiley.

Estate of Marcos Human Rights Litigation, 910 F. Supp. 1460 (D. Haw. 1995) (aff'd in *Hilao v. Estate of Marcos*, 103 F.3d 767 (9th Cir. 1996)).

Faigman, D.L., Fienberg, S.E. and Stern, A.C. (2003). *Issues in Science and Technology* online.

Fienberg, S.,and Kadane, J.B. (1983), "The presentation of Bayesian statistical analyses in legal proceedings." The Statistician, vol. 32, pp. 88-108.

Fienberg, S. (ed.). (1989). *The Evolving Role of Statistical Assessments in the Courts*. New York: Springer Verlag..

Fienberg, S.E., Krislov, S.H., and Straf, M.L. (1995), "Understanding and evaluating statistical evidence in litigation," *Jurimetr. J.,* **36**, 1-32.

M.O., and Levin, B. (2005), "The machinery of death," Chance, vol. 18, pp. 34-37.

[6] See, for example, Werner, B. (March/April 2005), "Distribution, abundance and reproductive biology of captive *Panthera Tigris* populations living within the United States of America," Feline Conservation Federation Magazine, vol. 49 no. 2.

[7]See, for example, Bura, E., Gastwirth, J.L., and Modarres, R. (2005), "Statistical methods for assessing the fairness of the allocation of shares in initial public offerings," Law, Probability and Risk, vol. 4, pp. 143-158.

[8] See, for example, *Estate of Marcos Human Rights Litigation,* 910 F. Supp. 1460 (D. Haw. 1995) (aff'd in *Hilao v. Estate of Marcos*, 103 F.3d 767 (9th Cir. 1996)); Ball, P., and Asher, J. (2002), "Statistics and Slobodan: Using data analysis and statistics in the War Crimes Trial of former president Milosevic," Chance, vol. 15, pp. 17-24; Mejia, R. (2006), **"**Grim statistics," Science, vol. 313, pp. 288-290.

Finkelstein, M.O., and Fairley, W.B. (1970), "A Bayesian approach to identification evidence," Harvard Law Review, vol. 83, p. 489.

Finkelstein, M. O. and Levin, B. (2001). *Statistics for Lawyers*, 2nd edition. New York: Springer Verlag.

Finkelstein, M.O., and Levin, B. (2005), "The machinery of death," Chance, vol. 18, pp. 34-37.

Frye v. United States, 293 F. 1013 (1923).

Gastwirth, J.L. (1988). *Statistical Reasoning in Law and Public Policy*, vols. I and II, San Diego: Academic Press.

Gastwirth, J.L. (1997), "Statistical evidence in discrimination cases," J. Royal Statistical Society, Series A, vol. 160, pp. 289-303.

Gastwirth, J. L. (ed.). (2000). *Statistical Science in the Courtroom*, Springer Verlag, New York.

Gonzales v. Carhart, Gonzales v. Planned Parenthood, Nos. 05-380 & 05-1382 (2006). Brief of *Amici Curiae* Statisticians.

Gray, M. W. (1993), "Can statistics tell us what we do not want to hear? The case of complex salary structures." Statistical Sciences, vol. 8**,** pp. 144-179.

Gray, M. W. (1996), "The concept of 'substantial proportionality' in Title IX athletics cases." Duke Journal of Gender and Social Policy, vol. 3, pp. 165-188.

Griggs v. Duke Power Company, 401 U.S. 424 (1971).

Hazelwood School District v. United States, 433 U.S. 299 (1977).

Jasanoff, S. (1998), "The age of everyman: Witnessing DNA in the Simpson trial," Social Studies of Science, vol. 28, pp. 713-740.

Joiner v. General Electric, 522 U.S. 13 (1997).

Kadane, J.B. (2005), "Ethical issues in being an expert witness," Law, Probability & Risk, vol. 4, pp. 21-23.

Kave, D.H. and Freedman, D. A. (2000), "Reference guide for statistics," in *Reference Manual on Scientific Evidence*, Washington DC: Federal Judicial Center.

Kuhmo v. Carmichael, 526 U.S. 137 (1999).

Liebman, J.S., *et al* (2000). *A Broken System: Error Rates in Capital Cases.* New York: Columbia School of Law.

Little, R.J. (2006), "Calibrated Bayes: A Bayes/Frequentist Roadmap," The American Statistician, vol. 60, pp. 213-223.

McCleskey v. Kemp, 481 U.S. 279 (1989).

Mejia, R. (2006), **"**Grim statistics," Science, vol. 313, pp. 288-290

People v. Collins, 68 Cal. 2d 319 (1968).

Roberts v. Colorado State Agriculture Board, 998 F. 2d 824 (10th Cir. 1993).

Swain v. Alabama, 408 U.S. 936 (1972).

Werner, B. (March/April 2005), "Distribution, abundance and reproductive biology of captive *Panthera Tigris* populations living within the United States of America," Feline Conservation Federation Magazine, vol. 49, no. 2.

Wilson v. Maryland, 370 Md. 191 (Ct. of Appeals of Md 2002).

Yick Wo v. Hopkins, 118 U.S. 356 (1986).