The Law and Economics of the Economic Expert Witness

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It is necessary at the outset to distinguish between economic expertise and economic expert witnesses. That economic expertise has a large and fruitful role to play in the law seems undeniable. There is a remarkable isomorphism between legal doctrine and economic theory. The isomorphism becomes an identity when, as in antitrust (but not only there), the law adopts an explicitly economic criterion of legality. The isomorphic relation is illustrated by Judge Learned Hand’s formula of negligence in United States v. Carroll Towing Co. (159 F.2d 169 (2d Cir. 1947)): an injurer is negligent if the burden of the precaution (B) that would have averted the accident was less than the magnitude of the harm (L, for loss) resulting from the accident, discounted by the probability (P) that the accident would occur if the precaution was not taken: that is, if $B < PL$. This bit of algebra, itself a paraphrase of verbal formulations of the negligence standard, is readily translated into a formula for optimal care derived by minimizing the cost function $A(c) = B(c) + P(c)L$, where $c$ is cost, $A(c)$ the total costs of accidents and accident prevention as a function of $c$, and $B$, $P$, and $L$ are as before. Minimizing the combined costs of prevention and accidents yields—with certain plausible assumptions laid out in Landes and Posner (1987, pp. 58–60, 87)—the rule that social cost is minimized when the marginal cost of taking precautions is equal to the marginal gain from the precautions, as measured by the cost of the loss if the accident occurs multiplied by the probability of the accident given the level of precautions taken. This is simply a precise economic formulation of the Hand formula; the substance is unchanged.

There are many other important examples of isomorphism between legal doctrine and economic theory; indeed, I regard it as pervasive (Posner, 1998). Lawyers could do much more to educate judges concerning it, and for that they...
need either the help of economists or a fair amount of economic training themselves. But I will not dwell on this point because it is not the domain of the expert witness. A witness is not an advisor or consultant, but someone who testifies—who offers what the law regards as “evidence.” The law uses the term rather narrowly. The considerations, including the economic considerations, that go to shape legal doctrine—that go for example to determine whether negligence or strict liability shall be the legal regime for some class of accidents, or whether tying agreements shall be illegal per se, or whether a contribution to a spouse’s human capital shall be considered property in a divorce proceeding, or whether punitive damages shall ever be awarded in a case of an efficient breach of contract—are not considered questions to be decided by taking testimony and testing its accuracy by cross-examination, but by reference to general considerations of law and policy.

The domain of evidence is the proof of particular facts in a case, such as, in a negligence case, whether the defendant did or did not take cost-justified precautions to avoid the accident. The expert will not be permitted to testify that a person disabled in an accident in which the injurer was at fault should be entitled to recover the present value of any lost future earnings, but will be permitted to testify to the calculation of that present value from information about wage profiles, longevity, inflation, interest rates, risk, discounting, and so forth. The expert will not be permitted to testify that antitrust law should not forbid price fixing, but will be permitted to testify that the defendants’ pricing behavior is inconsistent with their having agreed to fix prices or that it had no effect on the average price paid by the plaintiff. The expert will not be permitted to testify about whether the law should prohibit sex discrimination, but will be permitted to testify about potential causes of the difference between men’s and women’s wages that are unrelated to discrimination by a specific employer; for example, differences in investment in human capital.

The law governing the use of expert witnesses (including economists, who are not treated separately by the law) is set forth in Article VII of the Federal Rules of Evidence. The rules apply only to the federal courts, but the corresponding rules for state courts are similar. Essentially, Article VII permits anyone who has relevant expertise to be classified as an expert witness. The principal significance of the classification is that, unlike an ordinary witness, an expert witness is allowed to offer an opinion rather than being limited to testifying from personal knowledge. In other words, the expert is allowed to apply expert knowledge to the facts. Those facts need not be limited to those that can be proved by evidence admissible under the rules of evidence, which are rules designed mainly to shield inexperienced factfinders (the jurors) from evidence that might confuse, distract, or inflame them; the facts on which an expert bases an opinion need only be, in the words of Rule 703, the “type [of facts or data] reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject,” although the expert must make the facts or data which are relied on available to opposing counsel for cross-examination. A little-used provision, Rule 706, permits the judge to appoint an expert witness to be a court witness, a neutral (Lee, 1988); it is little used, in part, because judges lack confidence in their ability to pick a neutral. Later,
I'll suggest how they might overcome this problem. Other expert witnesses are hired by the parties and compensated at whatever rate the party and the witness agree on. The only limitation is that the witness may not receive a contingent fee, that is, a fee the size of which depends on the outcome of the case.

Criticisms and Responses Concerning the Use of Expert Witnesses

There are several recurrent criticisms of the use of expert witnesses (usefully summarized in Lee, 1988). They are made with reference to expert witnesses in general, but they do not exclude economists. All these criticisms belong to the genre of economic theory known as “agency costs.” The court corresponds to the principal in an ordinary principal-agent relation, and the expert witness to the agent. The parties have asymmetric information. The agent knows more; the principal knows this and takes steps to try to align the agent’s incentives with those of the principal.

The first criticism is that expert witnesses paid by the respective parties are bound to be partisans (“hired guns”) rather than being disinterested, and hence presumptively truthful, or at least honest, witnesses. This factor alone does not distinguish expert witnesses sharply from a number of other common types of witnesses, notably the parties themselves; but the difference, and the second criticism, is that expert witnesses, it is feared, can mislead judges and juries more readily than lay witnesses can because they are more difficult to pick apart on cross-examination—they can hide behind an impenetrable wall of esoteric knowledge. Even if an expert witness is demolished on cross-examination by a lawyer who has been carefully prepped by another expert, the jury may not understand the questions and answers given on cross-examination well enough to realize that the expert has been demolished.

The concern with tilt and the concern with the “bounded rationality” of the trier of fact interact. The expert has both motive and means of slanting the truth in favor of the client. Third, and related to both preceding points, it is believed that opposing experts often cancel each other out; the jury cannot choose between them, so it ignores them and decides the case on the basis of the nonexpert evidence. In such a case the expert evidence is wasted.

The first concern (excessive partisanship) does not seem to me very grave with respect to economic witnesses when they are testifying in areas in which there is a substantial professional consensus (a vital qualification, however, as we'll see). There are four reasons for my conclusion.1

1) Because most expert witnesses, including most economic expert witnesses, are repeat players (unlike most lay witnesses), they have, like other potentially

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1 Let me declare my interest: before I became a judge in 1981, I testified as an economic expert witness in several judicial and administrative proceedings, and I was a founder of Lexecon Inc., a consulting firm that specializes in the provision of economic testimony in litigation. I severed all ties with Lexecon when I became a judge.
disloyal agents, a financial interest in creating and preserving a reputation for being honest and competent. Any public judicial criticism of a witness—in an opinion, whether or not formally published, or even in the transcript of a trial or other hearing—is apt to impair the witness’s career as a witness, sometimes fatally, because the criticism is likely to be mentioned in the cross-examination of the witness in any future case. Furthermore, many economic expert witnesses are employed by consulting firms, which have a corporate reputation that can be damaged by the errors of their employees. There is a danger that judicial criticism of an expert may be uninformed. But, if so, the negative impact on the expert’s reputation will be less, since the next time the expert testifies will offer an opportunity to rebut the criticism if confronted with it during cross-examination.

The foregoing is not a complete answer to the criticism, because it is the repeat player who also has an incentive to please clients so as to be rehired in the future. The one-time expert witness presumably has nothing to lose or gain from testifying in a partisan manner, given the impermissibility of contingent fees for expert witnesses.

2) An expert witness who has a record of academic publication will be “kept honest” by the fact that any attempt to repudiate his academic work on the stand will invite devastating cross-examination. This implies that a warning flag should go up whenever the expert witness either has no record of academic publication or is testifying about matters on which he has never published. Not only is such an economist less likely to testify truthfully, but the lawyer’s choice of that person as an expert implies that the lawyer was unable to find a knowledgeable economist willing to testify in support of the client’s position.

3) Because of the adversarial character of the American system of litigation, and the requirement that the expert disclose evidence during the pretrial discovery process and thus before the trial begins (and in machine-readable form), expert evidence is subject to intense critical scrutiny, which should deter irresponsible expert testimony. In the case of economics, where the tradition of replicating previous academic studies is weaker than in the natural sciences, a study conducted for purposes of litigation is likely to receive more intense scrutiny than an academic study, even one published in a refereed journal.

4) An expert witness’s evidence is inadmissible if it does not satisfy the methodological standards in the expert’s field—something that is easier for the

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2 More than 600 economists belong to the National Association of Forensic Economics; the average member derives 42 percent of his income from forensic work; and 67 percent of the average member’s business is repeat business (Ward and Olson, 1993, pp. 1, 2, 8). I do not know what fraction of forensic economists belong to the association, or how representative they are—but I think not very, as they are primarily involved in personal-injury litigation and I believe do not include the more prestigious economists who testify in antitrust, securities and other commercial litigation. The principal role, to date, of the economic expert witness in personal injury litigation has been to testify concerning damages, including lost earnings and “hedonic” damages (damages for loss of utility).

3 Ireland, Johnson and Taylor (1997, p. 156) write: “A favorable mention in a reported case is of real benefit to a forensic economist, while an unfavorable mention is a major cost.”

4 For cases supporting this requirement see, for example, Daubert v. Merrill Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993); People Who Care v. Rockford Board of Education, 111 F.3d 528, 537 (7th Cir. 1997).
judge to determine than whether the analysis is correct. This rule acts as a screen against “junk science.” The mesh of the screen may actually be too fine, especially for economic expert evidence, much of which is statistical. There is some judicial reluctance to admit into evidence statistical studies that do not pass the 5 percent test of statistical significance. This test is of course standard in economics, though economists (and other social scientists) often interpret results significant at the 10 percent level as supporting their hypotheses and if the results are significant at the 2 percent or 1 percent level often point out that these results are more robust than those that are significant only at the 5 percent level.

Bayes’s theorem casts doubt on whether the 5 percent convention should control in the courtroom. If it did, this would imply that eyewitness testimony, too, should be inadmissible unless the probability that the testimony would have been given even if the event testified to had not occurred was less than 5 percent. The higher the significance level of a statistical study, the more reliable it is as evidence; and the lower that level, the less reliable it is; but it can be relatively unreliable yet still affect a rational judge or jury’s priors. Granted, a low significance level may reflect an unsound method of statistical estimation, an incorrect specification of the hypothesis being tested, a small sample size, or the omission of relevant variables. Any such danger signs may require a deep discounting of the reliability of the study; but that is true of any evidence. If the study has been conducted responsibly and withstood a hammering from the opponent’s expert, yet the significance level does not reach the conventional 5 percent level, it would not be a good reason for excluding the evidence that a social scientist who stretches the conventions of the discipline by reporting results that do not attain the conventional significance level must be untrustworthy. The convention is rooted in considerations that have no direct relevance to litigation, such as the need to ration pages in scientific journals. Fears that jurors are dazzled by evidence involving explicit probability estimates and so give it more weight than a good Bayesian would do appear to be unfounded; jurors appear to give statistical evidence less weight than they should (Smith et al., 1996; Salop, 1987).

But one must not overlook the cost of weak statistical evidence. The less robust the results of a statistical study offered as evidence, the more time will have to be spent at trial exploring the design of the study. Given the difficulty that judges and jurors have in understanding and weighing statistical evidence, there is an argument (akin to that for the hearsay rule) for excluding statistical evidence that the relevant profession, for whatever reason, considers weak.

The second concern with the use of expert witnesses—the concern with intelligibility once the evidence has been admitted—has undoubtedly merit, but is easily overstated because it ignores the lawyer’s incentive to call persuasive witnesses. If a witness cannot communicate in a way that the court understands, the

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5 This reluctance is based, as noted in Ireland (1998, p. 237), on an interpretation of Hazelwood School District v. United States (433 U.S. 299 (1977))—see note 17 on p. 311 in particular—and Castaneda v. Partida (430 U.S. 482 (1977))—see note 17 on p. 496. However, the interpretation is incorrect. See Ashenfelter and Oaxaca (1987).
testimony is unlikely to be persuasive. This is a particularly important consideration in jury trials, because jurors give less weight to credentials than to clarity (Shuman, Champagne and Whitaker, 1996, p. 379), and leads me to predict that jurors may understand expert testimony as well as judges do; that is, the lawyer will adjust the complexity of expert testimony to the comprehension of the audience.

This is not a complete answer. Econometrics is such a difficult subject that it is unrealistic to expect the average judge or juror to be able to understand all the criticisms of an econometric study, no matter how skillful the econometrician is in explaining a study to a lay audience (Rubinfeld, 1985). This problem cannot be solved, but it could be elided, by more frequent appointment of court-appointed experts. Concern with the judge’s ability to pick a genuine neutral to be the court’s expert could be alleviated by borrowing a leaf from arbitration. A common method of selecting arbitrators is for each party to choose an arbitrator and for the two arbitrators to then choose a neutral, who generally casts the deciding vote. The parties’ experts could, similarly, agree on a neutral expert who would be appointed by the court, as proposed in Rubinfeld (1985, p. 1096). The views of the neutral expert would quite properly have decisive weight with the jury. It would not matter whether the jurors understood the neutral fully; the conclusions of the agreed-upon expert would be credible because of the combination of neutrality and expertise. You don’t have to understand a proposition to be justified in believing it; you need only be able to repose a justified trust in the truthfulness and expertise of the person who assures you that the proposition is true.

The third concern about expert testimony—that opposing experts often cancel each other out—would be alleviated if, instead of testifying, they selected a neutral expert. Even when there is no neutral, it might seem that whenever the opposing experts canceled each other out the parties would agree not to call them as witnesses, to reduce the expense of litigation. This happens occasionally, but not often, maybe because a lawyer who suggested that neither side should call expert witnesses would be understood to be signaling that the available experts on one side would actually be weaker than the opposing experts.

Note that if market or other incentives kept experts fully honest, defendants’ lawyers would often not introduce expert testimony at all, because they would find it difficult to locate a reputable expert who would contradict the plaintiff’s expert (Short and Sattler, 1996). So we should expect both sides in a lawsuit to present expert witnesses more often the “softer” the science related to the case.

Where the use of economic experts is most problematic is in the areas of economics in which there is no professional consensus. This used to be, and to some extent still is, the situation with regard to antitrust economics. A perfectly respectable economist might be an antitrust “hawk,” another equally respectable economist a “dove.” Each might have a long list of reputable academic publications fully consistent with systematically pro-plaintiff or pro-defendant testimony, and so a judge or jury would have little basis for choosing between them. There might be

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6 For examples of such difficulties in the area of employment discrimination, see Heckman (1998) and Follett, Ward and Welch (1993).
no available neutrals, in which event a court-appointed expert would perforce be a partisan.

A neglected cost of the use of economists to give testimony is the diversion of academic economists, especially those with tenure, from scholarly work to testifying. Becoming an expert witness may pay an academic dividend, by giving an economist access to otherwise unavailable data. But it is unlikely that the net output of academic economists (weighting quantity by quality) is greater as a result of their being in demand as expert witnesses. The opportunity for extra income may of course draw able people into economics who would otherwise choose some other occupation, but this is a social gain only if their social product as economists is greater than it would be in the calling that they would otherwise follow—or if it enables universities to pay lower salaries to economists. A further problem is that once an economist has a “track record” of successful testimony, that person may be reluctant to publish results of academic research that undermine the positions previously taken, or that were to be taken in the future, in the economist’s career as an expert witness.

If academic salaries were equal to the social marginal product of academics, the deflection of academics from academic research to testifying would not reduce social welfare. But if academic research in economics produces social gains not captured by the researcher, and if that surplus is less than the surplus created by economists’ testifying, then the practice of hiring academic economists to testify does create a social cost (subject to the proviso in the previous paragraph concerning the social product of other occupations).

This ignores, however, the possibility that the social benefits of economic testimony exceed the social costs of a reduction in academic research. To the extent that economic evidence increases the accuracy of trials, it enhances the deterrence of wrongful behavior. The expected cost of punishment for some crime is the probability of punishment if one is guilty multiplied by the length of the sentence to be received if found guilty. If justice is purely random, then the chance of being punished would be the same whether one was guilty or innocent—and there would be no deterrence.7 The more accurate the process of determining guilt is, the less random punishment will be, and the greater the probability that the guilty will be punished and the law-abiding will not, so the greater will be the law’s deterrent effect (Posner, 1973, p. 412). To the extent that economic expert testimony does promote optimal deterrence, it confers an external benefit that may be as great as the external benefit generated by the expert’s academic research and teaching.

7 In algebraic terms, the expected cost of punishment (EC) for some crime (or some unlawful act) is actually the difference between the expected cost of punishment if one commits the crime (ECg = pgS, where pg is the probability of punishment if the accused is guilty and S is the sentence) and the expected cost of punishment if one does not commit it (ECi = piS, where pi is the probability of punishment if the accused is innocent and S is as before). Hence EC = pgS − piS; equivalently, EC = (pg − pi)S, making it transparent that if punishment is imposed randomly, so that the probability of punishment is the same regardless of guilt (that is, if pg = pi), the expected punishment cost for committing the crime will be zero.
Additional Proposals

Supposing that economists’ testifying as expert witnesses is here to stay, we should consider how it might be improved. My major proposal is the greater use of court-appointed experts selected on the arbitration model, but I have two additional proposals.

First, to make judicial criticism a more effective method of bringing reputation costs to bear on the errant expert, the American Economic Association (or a for-profit firm that marketed the information to law firms) should maintain a roster of all testimonial appearances by members of the association. The roster could contain an abstract of the member’s testimony (or, if the roster took the form of a web page on the World Wide Web, the entire testimony) and would also record any criticisms of the testimony by the judge or by the lawyers or experts on the other side of the lawsuit. Then, the profession could monitor its members’ adherence to high standards of probity and care in their testimonial activities.

It may be objected that this project is to one side of the AEA’s main mission, which is to support economic research and teaching. But the AEA purports to represent the economics profession as a whole; many of its members are not academics; shoddy economic testimony can impair the reputation of the profession as a whole; and to the extent that testifying diverts economists from research and teaching, and may even distort those activities, the maintenance of high standards in economic testifying supports the research and teaching functions.

Second, lawyers who call an economic expert as a witness should be required to disclose the name of all the economists whom they contacted as possible witnesses. This will alert the jury to the problem of “witness shopping.” Suppose that the lawyer for the plaintiff hired the first economist whom he interviewed and the lawyer for the defendant hired the 20th economist whom she interviewed. The inference is that the defendant’s economic case is weaker than the plaintiff’s. The parallel is to conducting 20 statistical tests of a hypothesis and reporting, as significant at the 5 percent level, the only one that supported the hypothesis.

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References


This article has been cited by:


3. Jingyuan Ma. Enforcement of Competition Law—Role of the Courts and Economic Experts 201-225. [Crossref]

4. Péter Cserne. Economic Approaches to Legal Reasoning: An Overview 25-41. [Crossref]

5. Claudio Lombardi. Causation in Competition Law Damages Actions 91, . [Crossref]

6. Camila C. Pires-Alves, Marcos Puccioni de Oliveira Lyra, Marina Maria Gutierrez Bonfatti. The use of quantitative methods to analyze anticompetitive effects of mergers and acquisitions in antitrust: the Brazilian experience 1197-1215. [Crossref]


8. Alain Marciano. Posner, Richard 1618-1625. [Crossref]


10. Alain Marciano. Posner, Richard 1-7. [Crossref]


13. Tembinkosi Bonakele. The Nature and Use of Economic Evidence in Competition Enforcement (with Special Emphasis to the Case of South Africa) 187-205. [Crossref]


22. E. James Cowan. Chapter 9 A Race to the Top: Enabling Juries to make Informed Decisions when Confronted with Forensic Evidence 143-170. [Crossref]


28. O. Budzinski, I. Ruhmer. 2010. MERGER SIMULATION IN COMPETITION POLICY: A SURVEY. *Journal of Competition Law and Economics* 6:2, 277-319. [Crossref]


38. Bruno S. Frey. 2006. How Influential is Economics?. *De Economist* 154:2, 295-311. [Crossref]

39. Arndt Christiansen. 2006. The Reform of EU Merger Control – Fundamental Reversal or Mere Refinement?. *SSRN Electronic Journal*. [Crossref]


