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Refocusing the New Evidence Scholarship : A Comment on Robert S. Thompson's "Decision, Disciplined Inferences and the Adversary Process"

Terence J. Anderson

University of Miami School of Law, tanderso@law.miami.edu

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REFOCUSING THE NEW EVIDENCE SCHOLARSHIP *

*Terence J. Anderson***

A COMMENT ON ROBERT S. THOMPSON'S "DECISION, DISCIPLINED INFERENCES AND THE ADVERSARY PROCESS

At the Boston symposium in 1985, Richard Lempert developed a metaphor that remains evocative: debates among probability theorists over the validity and applicability of their various theories in the context of litigation might well appear to lawyers to be like great powers fighting old wars and testing new weapons on Belgian territory without much regard for local terrain.¹ Robert Thompson, in my view, has assumed the role of experienced ambassador and usefully presented the Belgian perspective in an effort to explain again to the contending powers why their efforts and weapons are misdirected in significant ways.² I shall assume here the role of the Belgian peasant called from the fields to develop those views from a consumer's perspective. I shall use that role to highlight what I see as three of the central points established by Thompson's argument and to develop some corollaries that I hope will persuade those engaged in the "new evidence scholarship" (the story theorists, as well as the probability theorists) that their work should be refocused to take into account more fully the various standpoints of its potential users. The role will permit me, I trust, to ignore some of the constraints of diplomacy.

Let me begin by articulating three propositions that I think are common ground for all, contending powers and Belgians alike:

1. The principles of logic—inductive, abductive, and deductive—can be applied to any mass of data that constitutes evidence from

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** Professor, University of Miami School of Law. This comment is informed by my work with William Twining over the years and has benefitted from his comments on a preconference draft. I am grateful for both his long-term and immediate contributions to my thinking. I have left the text largely as presented at the conference; I have added footnotes to amplify or clarify points suggested in the text.

¹ The papers and comments that were delivered at the Boston Symposium on "Probability and Inference in the Law of Evidence" were subsequently published. 66 B.U.L. REV. 377-952 (1986). Lempert's metaphor was reported by one commentator. Twining, *The Boston Symposium: A Comment*, 66 B.U.L. REV. 391, 393 (1986).

² Thompson, *Decision, Disciplined Inferences and the Adversary Process*, 13 CARDOZO L. REV. 725 (1991).

which we wish to reconstruct past events in order to resolve disputed questions of fact.

2. The propositions established by these data and those proffered as possible inferred propositions can be articulated and can be organized and marshalled as arguments bearing upon the resolution of such disputed questions of fact.
3. Systems exist for depicting these propositions in symbols and for depicting the claimed logical relationships among them in graphic or charted form.³

If I am correct in the view that these propositions are essentially noncontroversial, two issues seem central to the contending powers—one concerns the atomists and holists and the other frames the debates among the probability theorists—both of which raise matters of concern among us Belgians:

1. Are the kinds of rigorous, atomistic, logical analysis and charting of evidential data and arguments that *can* be done *useful in fact* in the context of litigation, and if so, by whom and for what purposes?
2. Can formal systems of probabilistic reasoning and decision making contribute anything of practical utility in assessing the strength of particular inferential relationships or of the multiple and complex relationships that bear upon the disputed questions in a case as a whole?

The first issue, as I conceive it, is one that gives rise to perceived disagreements between the atomists and the holists, the logicians and the story folk.⁴ The second issue has been perceived as a source of disagreements between the Baconians and the mathematicians and of the disagreements among those within each group. In my view, Thompson's *Decision, Disciplined Inferences and the Adversary Process* lays a foundation for concluding that the present debates and disagreements are misconceived in some fundamental ways and that much of the

³ The points are developed and a tutorial for their application in the context of litigation is provided in T. ANDERSON & W. TWINING, *ANALYSIS OF EVIDENCE* (1991). Fact skeptics and others have claimed that the first proposition is open to question, but they have largely assumed its validity in their own work. See W. TWINING, *RETHINKING EVIDENCE* 32-91 (1990) (describing the rationalist tradition, its dominance in evidence scholarship, and the assumptions that underlie it).

⁴ The dichotomy is rarely so sharp as this comment may suggest. Most of the papers in this symposium are by authors who believe that logical and detailed reasoning is crucial. In context, the most illustrative is Schum & Tillers, *Marshalling Evidence for Adversary Litigation*, 13 *CARDOZO L. REV.* 657 (1991). The story theorists are also ably represented. See Pennington & Hastie, *A Cognitive Theory of Juror Decision Making*, 13 *CARDOZO L. REV.* 519. I doubt that representatives from either camp would seriously question the value of the work being done in the other. See *infra* notes 19-22 and accompanying text.

work that has been done could usefully be redirected and the debates refocused. Thompson develops three points that I see as the foundation for this view—one explicitly and at length, the other two, implicitly and with less emphasis than I think they deserve.

First, the common-law model of adjudication cannot be reconciled with the introduction of a *general* requirement that judges or juries calculate or use mathematical probabilities (subjective or objective) or other formal decision theories to reach or to justify the factual determinations upon which the judgment on a case-as-a-whole is based.⁵ Thompson states the point more diplomatically, but in my view his detailed account of the system and the values it serves, in addition to information processing, supplements the work of Twining,⁶ Zuckerman,⁷ and others⁸ in ways that justify this stronger assertion without further amplification at this stage of the proceedings.

Second, Thompson implicitly makes a further and related point that does merit further development: *In principle*, the adversarial system is designed to assure *generally sound* processing of information and resolution of questions of fact *because* it assigns primary responsibility for atomistic analysis and evaluation to the contending lawyers and *appropriately* restricts the amount of information and the manner of its presentation to the ultimate decision maker, be it judge or jury.⁹ The probability theorists have, in my view, yet to explain how full implementation of their theories *could* significantly improve the accuracy of the factual determinations required, quite apart from any mischief such implementations might cause by undermining the other values that properly inform trial court judgments. I think Ward Edwards may be the last committed probabilist who has not acknowledged this in any degree, so I will develop the point using illustrations from foreign territories in which he works.

Whatever one's view of the merits, I assume all would agree that the President and his senior subordinates recently had to make decisions that had significant factual components, but that also required them to take into account political and other significant values. The decision to launch an attack on Iraq on January 16, 1991 required, I

⁵ See Thompson, *supra* note 2, at 728-30, 746-56.

⁶ See, e.g., W. TWINING, *supra* note 3, at 117-34.

⁷ Zuckerman, *Law, Fact or Justice?*, 66 B.U.L. REV. 487 (1986).

⁸ The arguments of others fall generally into two categories—arguments that the use of mathematical forms of reasoning would distort the other values incident to the common-law trial (see, e.g., Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 HARV. L. REV. 1329 (1971)), and arguments that the reasoning necessary to resolve disputed questions of fact is, in significant part, nonmathematical in principle (see, e.g., L.J. COHEN, *THE PROBABLE AND THE PROVABLE* (1977)).

⁹ See Thompson, *supra* note 2, at 744-55.

assume, complex factual determinations about the kind, amount, and quality of Iraq's armed forces and equipment and their state of preparedness; about the allied state of readiness; and so on. So too, the decision to launch a ground attack five weeks later had similar factual components. I assume that all would concede that the president was properly required to take into account factors and values in addition to those dictated by the information processing that informed the factual determinations required.

I should like to think that Edwards and I would share common ground on two points. First, I hope we would agree that it would have been neither useful nor appropriate for the president to pull a little personal computer around to aid him, as does Edwards's doctor friend,¹⁰ or to require that the pool of citizens eligible to be president be restricted to those who have mastered "Bayes nets" and have the capacity to construct, use, or understand "influence diagrams" of the kind that Edwards reports are in vogue in Palo Alto.¹¹ Second, I am confident that we would agree (although it may surprise him) that the intelligence officers at various levels charged with analyzing the data, constructing and testing appropriate hypotheses, marshalling and critiquing arguments, and developing the principal contending scenarios that will be presented to those charged with resolving any disputed questions of fact necessary to the ultimate decision should include analysts who understand and apply David Schum's lovely two-volume work¹² (and who should probably be informed about what is going on in the Palo Alto area).

The point to be recognized is that the adversary process and the common-law model of adjudication allocate roles and functions in a similarly appropriate fashion. The primary responsibility for analysis is among the responsibilities assigned to lawyers. It is they who analyze the data; construct and critique hypotheses and arguments; and, where necessary develop what they see as the strongest theory of the case on each side, marshal the evidence and arguments that best support (or confound) the contending theories, and construct the stories that they will urge the ultimate decision maker to adopt.

The common-law model in which the trial is "a separate and isolated event"¹³ in which contending adversaries present evidence they

¹⁰ Edwards, *Comment: Summing Up: The Society of Bayesian Trial Lawyers*, 66 B.U.L. Rev. 937, 937 (1986).

¹¹ Edwards, *Influence Diagrams, Bayesian Imperialism, and the Collins Case: An Appeal to Reason*, 13 CARDOZO L. REV. 1031 (1991) (describing influence diagrams and arguing for their use in adjudicative decision making).

¹² D. SCHUM, *EVIDENCE AND INFERENCE FOR THE INTELLIGENCE ANALYST* (1987).

¹³ Thompson, *supra* note 2, at 748.

have culled from the universe of available and potentially relevant data and present the contending theories, arguments, and stories that they have selected and developed, provides, in principle, a sound method of processing information to aid the judge or jury in resolving, efficiently, finally, and accurately, the factual issues necessary to a judgment that serves important additional values. So long as the analysts have done their jobs well and made such probabilistic calculations and assessments as were appropriate or useful, it is hard to see why we would want a system that would require the ultimate decision maker to replicate, rather than assess, their work as a basis for resolving disputed questions of fact necessary to reach a judgment on the case as a whole.

Third, the litigation process is complex. It is not only complex in the aspects that Thompson describes, but it is also complex in ways that were not germane to Thompson's arguments, but that are germane to this symposium. It is a process that contemplates multiple phases that have different and varied functions. It is a process that involves multiple participants who have different roles and objectives at different stages of the process—not just clients, lawyers, judges, and juries, but also witnesses, court clerks, law clerks, bailiffs, and others. It is a process in which the available data are typically complex with the consequence that the complexity of the possible inferential relationships is multiplied. And, finally, the litigation process is complex because it is a process that requires lawyers and clients, as well as judges and others, to make decisions and take actions based upon assessments of the then state of the evidence at every stage of the process and for a variety of different purposes.¹⁴

The point should be obvious, but there remains a seeming reluctance to accept its consequences fully that remains a barrier to useful collaborations. Schum has long recognized the point,¹⁵ and his recent work with Tillers has embraced it in many respects.¹⁶ The work of others, however, seemed in 1985, and seems now, to reject or ignore it.¹⁷ Some probabilists seem to take the view that the Belgian terrain

¹⁴ See T. ANDERSON & W. TWINING, *supra* note 3, at 340-67 (discussing kinds of decisions and decision makers, and providing a provisional taxonomy of the standards available to guide those who must make the various decisions that arise in the context of litigation).

¹⁵ See, e.g., Schum, *Probability and the Processes of Discovery, Proof, and Choice*, 66 B.U.L. REV. 825 (1986).

¹⁶ See, e.g., Tillers & Schum, *A Theory of Preliminary Fact Investigation*, 24 U.C. DAVIS L. REV. 931 (1991); Schum & Tillers, *supra* note 4; but see Twining, *Five Cheers for Schum and Tillers*, 13 CARDOZO L. REV. 713 (1991) (for a few cavils on the nature of the embrace).

¹⁷ See, e.g., Fienberg & Schervish, *The Relevance of Bayesian Inference for the Presentation of Statistical Evidence and for Legal Decisionmaking*, 66 B.U.L. REV. 771 (1986); Fienberg, *Comment: Misunderstanding, Beyond a Reasonable Doubt*, *id.* at 651; Edwards, *supra* note 10

should be simplified to fit their models. Having advanced an argument, sometimes compelling, that their model would be a powerful tool on such a simplified terrain, they express surprise and dismay when it is ignored by those working with original and unchanged terrain.¹⁸

These points have corollaries that bear upon the issues posed above and suggest ways in which the main strands of the new evidence scholarship might productively be redirected. I would like to suggest a few, only by way of illustration. The first is simple and, I think, should be noncontroversial. The perceived conflict between the atomistic logicians and the holistic story theorists is a false conflict stemming largely from a failure to distinguish among the standpoints of various participants at the various stages of the litigation process. The claim that juries choose among (or construct themselves) stories as the basis for resolving factual disputes in no way diminishes the need for lawyers to engage in detailed atomistic, logical analysis in order to identify and test story possibilities in the available evidence; to select the most plausible accounts and marshal the data and arguments that support them; to identify story possibilities available to the opponent; and to marshal the data and arguments necessary to emphasize flaws in these stories that are likely to impress the jury as substantial.¹⁹ For the most part, the work of the story theorists is and should be welcome stuff in the trenches and academies of Belgium. This is a point Twining has developed at some length,²⁰ and one which he and I have presented in a form suitable for use by Belgians and would-be Belgians.²¹ The point, if accepted, simply suggests that greater collaboration among story theorists, and those engaged in allied enterprises, and lawyers might advance the agendas of all in useful ways.²²

(then); compare, e.g., Edwards, *supra* note 11, at 1044 ("The main problem in constructing a model of a case is to avoid too much detail. My first attempt to model the *Collins* case [People v. Collins, 68 Cal. 2d 319, 483 P.2d 33, 66 Cal. Rptr. 497 (1968)] was disastrous because I included every putative uncertainty I could think of.") (now).

¹⁸ See Edwards, *supra* notes 10-11 (for the views of the most persistent representative of the camp).

¹⁹ See T. ANDERSON & W. TWINING, *supra* note 3, at 165-71 and 257-66 (development of point), 278-89 (illustrative materials).

²⁰ See W. TWINING, *supra* note 3, at 219-61 (for a discussion of "lawyers' stories").

²¹ See materials cited *supra* note 19.

²² Thompson's paper does suggest some specific areas that may merit collaborative attention. For example, Thompson identifies lawyer practices that are inconsistent with the values of the adjudicative model and procedures that are frequently misused. Thompson, *supra* note 2, at 770-71, 773-75, 779-80. His point might well be extended to consider the limits that should be observed by lawyers in constructing and urging stories before the adjudicative tribunal. This seems to me to be an area in which both academic lawyers and story theorists might

The more important corollaries I would derive are directed toward the probability theorists. All of these suggest that they have paid too little attention both to the concept of standpoint and to the various standpoints that lawyers must take, given the roles assigned them in the litigation process.²³ The fact that lawyers are assigned primary responsibility for analyzing the data and constructing and criticizing arguments at every stage of the process suggests that probabilists might usefully expand or redirect their work to consider the different kinds of factual conclusions lawyers are required to make and the decisions and actions they are required to take at various stages in the process in order to determine whether and how these conclusions could and should be informed by probabilistic reasoning.

For those concerned with probability theory in evaluating the evidence in a case as a whole, this would suggest that they might usefully redirect their work toward demonstrating how lawyers might employ probabilistic reasoning in constructing and criticizing available arguments. For example, Edwards demonstrates convincingly to me that the trial and resulting arguments in the *Collins* case²⁴ would have been improved had counsel for both the prosecution *and* the defense consulted with experts or been able to analyze the case in the terms that Edwards suggests.²⁵ That analysis suggests mathematically based arguments that could have been framed in nonmathematical terms that either side could have developed to argue that the Collinses were or were not the guilty parties.²⁶

usefully inform each other's work and address some practical problems whose resolutions might improve the adversary system.

²³ The concept of *standpoint*, as used here, represents one of Twining's many contributions to clarifying ways of thinking about law and legal problems. See W. TWINING & D. MIERS, *HOW TO DO THINGS WITH RULES* 64-72, 120-22, 184-92 (3d ed. 1991) (concept developed and uses illustrated); see also T. ANDERSON & W. TWINING, *supra* note 3, at 120-21, 160 (standpoint in context of fact analysis and litigation).

²⁴ *People v. Collins*, 68 Cal. 2d 319, 438 P.2d 33, 66 Cal. Rptr. 497 (1968) (reversing conviction because prosecutor had been permitted to assign speculative probabilities to six nonindependent identifying characteristics and to use the rule of multiplication to argue that there was no more than a 1 in 12,000,000 probability that there was a couple in Los Angeles other than the Collinses who had all six characteristics).

²⁵ Edwards, *supra* note 11, at 1044-45.

²⁶ The prosecutor might have taken Edwards's analysis, used metaphorical examples such as the chances that five die would all show a six on a single roll, to plant the idea underlying the multiplication rule, and used nonmathematical terms to develop the notion that there was no reasonable doubt that the Collinses were the guilty parties. See T. ANDERSON & W. TWINING, *supra* note 3, at 338 (probability table suggesting comparable ways for expressing probability judgments in mathematical and nonmathematical terminology). The defense might have developed those "putative doubts" that Edwards found so disastrous to his analysis (Edwards, *supra* note 11) to identify the specific doubts and to show how they could be combined and aggregated to establish "reasonable doubt".

Two more illustrations should suffice for present purposes. First, a lawyer must reach a tentative conclusion of the likelihood of success before she decides whether to undertake a case or file a pleading. The conclusion requires an assessment of the available and potentially available evidential data and the likelihood that arguments based upon that data can be developed and marshalled to achieve a desirable result. The decision, of course, involves more—the costs and benefits to the client, the likelihood that action will induce settlement or alter behaviors in desired ways without the need for protracted litigation, and so on.²⁷ Second, there is already substantial literature on how and whether a lawyer and client should settle a case. Decision theorists, as well as economists, have contributed to this literature.²⁸ Most the views developed require the participants to reach conclusions on the probability that liability will be established and on the probable value of the resulting reward, if liability is established, as the *starting points* for the analysis. Insofar as I am aware, no one has explicitly undertaken to demonstrate how probabilistic systems might be employed in assessing the evidence as an aid to reaching better settlement conclusions on those points.²⁹

These seem to me to be the kinds of areas in which probabilists might be able to make contributions that would persuade lawyers that their pretrial theories should be employed. Such contributions might even persuade legislators or courts that use of such theories should be required to address and correct some systemic pretrial problems and abuses of the kind that Thompson identifies.³⁰ The points, corollaries, and examples I have offered are far from exhaustive. They are intended only to demonstrate that there are additional perspectives that could and should be explored in greater depth. I should also make it clear that I am among those Belgians who believe that the contending powers have made useful contributions. I suggest here only that their contributions might be more significant and better received if they

²⁷ Thompson identifies pretrial investigation and ongoing trial preparation as areas of concern. In that context, probabilists might usefully consider whether they could provide better bases for demonstrating that, or deciding whether, an attorney had made "reasonable inquiry," and whether an allegation was "well grounded in fact" at the time she signed the pleading in which it was made, as required by FED. R. CIV. P. 11. I suspect the bar and bench would welcome tools that enabled them to address this issue more objectively, and I suspect that work such as Edwards's might well provide guidance in areas such as this.

²⁸ See, e.g., S. NAGEL & M. NEEF, *DECISION THEORY AND THE LEGAL PROCESS* 141-46 (1979) (decision theory); R. POSNER, *ECONOMIC ANALYSIS OF LAW* SCHOOL 522-28 (3d ed. 1986) (economic theory).

²⁹ The kind of reasoning process required to make such assessments is described and illustrated in T. ANDERSON & W. TWINING, *supra* note 3, at 347-48.

³⁰ Thompson, *supra* note 2, at 767-79.

paid greater attention to the essential characteristics of the terrain as it exists and the specific needs of those who till its fields. The preconference papers I reviewed suggest that this symposium should provide much that we Belgians may find useful.