

1999

# The Art of the Fact

Jethro K. Lieberman  
*New York Law School*

Follow this and additional works at: [http://digitalcommons.nyls.edu/fac\\_articles\\_chapters](http://digitalcommons.nyls.edu/fac_articles_chapters)

 Part of the [Legal Education Commons](#)

---

## Recommended Citation

5 Legal Writing 25–54 (1999)

This Article is brought to you for free and open access by the Faculty Scholarship at DigitalCommons@NYLS. It has been accepted for inclusion in Articles & Chapters by an authorized administrator of DigitalCommons@NYLS.

# The Art of the Fact

*Jethro K. Lieberman\**

Imagine preparing to become a bookbinder. You take a professional course in the history and theory of binding. You examine historic books, study their design, read what others have said about them, see pictures of the tools, even investigate the chemical composition of the boards. But in this course you never actually bind a book. When you finish the course, though, the instructor hands you a piece of paper that says: "Congratulations, you are now a bookbinder." I imagine you'd ask for your money back.

To our shame, that's how we teach in the legal academy.

This observation is scarcely original. Fifty years ago, Jerome Frank, perhaps the fiercest critic of the conventional case method, wrote: "If it were not for a tradition which blinds us, would we not consider it ridiculous that . . . law schools confine their students to what they can learn about litigation in books? What would we say of a medical school where students were taught surgery solely from the printed page? No one, if he could do otherwise, would teach the art of playing golf by having the teacher talk about golf to the prospective player and having the latter read a book relating to the subject."<sup>1</sup>

Frank wanted students to learn by doing, by working in law offices, much as medical students learn by working in hospitals. I propose something much more modest, and therefore more important, because it is at least theoretically possible to accomplish what I aim to suggest and develop, with your help: teaching how to locate, assess, and draw inferences from facts.

A few years ago I concluded that something was drastically wrong with legal education—perhaps we all come to that conclusion sooner or later—and, more, I became convinced that I knew the source of the defect: We do not teach or even talk about the

---

\* Professor of Law and Director of the Writing Program, New York Law School; Adjunct Professor of Political Science, Columbia University. B.A., Yale University; J.D., Harvard Law School; Ph.D., Columbia University. Thanks to Professor David R. Samuelson for helpful editing suggestions.

<sup>1</sup> Jerome Frank, "A Plea for Lawyer-Schools," 56 *Yale L. J.* 1303, 1311 (1947).

one thing on which lawyers spend most of their time, namely, ferreting out the facts. I began to talk about this problem with some of my colleagues, even to the point of hosting a lunchtime colloquium two years ago on teaching facts. I can confidently state that my enthusiasm for my discovery won me no converts.

I then realized that this problem, framed dramatically as "the failure of legal education," would make a dandy chapter in a book I have been claiming to be working on for the past ten years on the problem of lawyers in America (with my authorial colleague and good friend Tom Goldstein, now dean of the Columbia Journalism School). When the opportunity for this talk arose, I decided finally to take the plunge and to begin to think systematically about this problem of our failure to talk about facts. That way I could give this talk and write a chapter and have two for the cost of one.

Almost as an afterthought, I decided I should make a brief excursion to the library. I'm old enough now to know that most of what I think I have dreamed up has already been voiced by others. So I suppose I should not have been surprised to discover a literature, albeit a small one, about this very problem. It's nearly a century old. It is even denominated by a set of initials, though I think these are perhaps only a few decades old: EPF, evidence, proof, and facts.

EPF appears to have started with John H. Wigmore early in the century. (I suppose I should say early in the 20th century, in case these remarks are actually preserved for another year or two.) Wigmore was, no doubt, reacting to the case method of teaching that by the beginning of World War I had certainly established itself in the American law schools. Wigmore proposed that something more was needed, not merely an analysis of legal rules, even if from original sources, but an analysis of the persuasive power of the facts themselves. Why do we accept a statement as fact? What constitutes sufficient evidence? What makes a datum relevant to an issue? Wigmore devised a complex symbolism, with flow charts, that permitted the student to map the relationship between facts, and testimony about facts, and the likelihood that one assertion or another was true and "proved" some ultimate fact.<sup>2</sup>

---

<sup>2</sup> John H. Wigmore, "The Problem of Proof," 8 *Ill. L.Rev.* 77 (1913); JOHN H. WIGMORE, *THE SCIENCE OF JUDICIAL PROOF AS GIVEN BY LOGIC, PSYCHOLOGY, AND GENERAL EXPERIENCE AND ILLUSTRATED IN JUDICIAL TRIALS* (3rd ed. 1937).

Wigmore, because he was dean of Northwestern, could mandate that all students take a course in which he taught how to use his symbolic logic to reason with facts and draw inferences from them. When he was no longer dean the course was no longer required, and when he passed from the scene the course was not taught. Episodically during the intervening decades, other voices, some of them powerful, have suggested that Wigmore's idea, or something like it, must be revived. About a quarter century ago, clinical courses gained a foothold in the legal academy,<sup>3</sup> and they may be understood as one answer to Wigmore's call. My clinical colleagues tell me that fact issues are now taught to some degree, certainly more so than in the days when the case method was not merely the supreme method but the sole method of teaching. Clinical courses focus on pre-trial litigation, trial advocacy, "skills" courses that teach interviewing (and perhaps negotiation), and various "live-client" clinics and subject-related workshops. These courses are important. But they are expensive and *they do not reach very many students*. The question I'm posing is whether we can do for the curriculum what research and writing courses have achieved during the past two decades. Can we design a course that will reach *every student in the school*?

We need to provide this course because the "case-trained lawyer is in danger of having a distorted picture of the world in which the pathological and the exotic obscure the healthy and the routine."<sup>4</sup> Mariana Hogan, the New York Law School externship director, reports that students sent out to work in law offices around New York City commonly complain that they rarely do the "real work" of lawyers. What do they do instead? Frequently, it seems, they are asked to sort through a file to uncover the facts! *Real* lawyers, they assume, know otherwise. Two decades ago, a well known survey of the Chicago bar reported that only two "skills" of the practicing lawyer are really essential: "fact gathering" and "the capacity to marshal facts and order them so that concepts can be applied."<sup>5</sup> Commenting in the early 1990s on this survey, Abraham P. Ordover noted that what lawyers "do, day in and day out, is investigate, gather, re-

---

<sup>3</sup> Anthony G. Amsterdam, "Clinical Legal Education? a 21st-Century Perspective," 34 J. OF LEGAL EDUC. 612 (1984).

<sup>4</sup> William Twining, "Taking Facts Seriously," 34 J. OF LEGAL EDUC. 22, 39 (1984).

<sup>5</sup> FRANCES KAHN ZEMANS & VICTOR G. ROSENBLUM, THE MAKING OF A PUBLIC PROFESSION 124-5 (1981).

search, assimilate, and understand the relevance of facts. This holds true for responses all across the lines of expertise in the profession. And yet this fact work is, by and large, not taught in our law schools."<sup>6</sup>

Does this inattention to teaching about facts really make a difference? A half century ago perhaps it did not: when law school admissions were relatively low most young graduates received on-the-job training in firms or had the leisure in their own shops to learn it for themselves, and there was much less law. The difficulties that arise when schools ignore fact analysis were less apparent. Today I put it to you that we are verging on a crisis: After they graduate nowadays, law students do not get the personal training that their forebears received. The firms complain about it, the law offices complain about it, and woe betide the new solo practitioner who has no idea how to uncover or make much of the facts.

We call the places in which we work Law Schools. What we really mean is that they are Rules Schools. Law school teachers suppose, probably without thinking deeply on it, that they are masters of teaching "legal analysis." But what we really teach is "rules analysis," not all of analysis. And rules analysis, in the final analysis, is only a small part of the enterprise. We do it, I think, because it's easy to do. We don't have to get our hands dirty. We don't have to go out and look very hard for anything. It's all in the library or on line. We find the rules; we find articles about the rules; we find other people's comments about how the rules work or not; and we intuit (we call it analyzing) their difficulties. We do not get grimy from researching in the real world.

This was the critique, in part, leveled by the legal realists, but most of them went off in the wrong direction, still worrying, in the end, about rules and what accounts for them and how they are interpreted. The more important question for our students is how the rules are to be used. One of the most prescient of the realists, Jerome Frank, did worry about this question. He described himself as a "fact skeptic,"<sup>7</sup> but very few people have taken him up on the implications of his claims.<sup>8</sup> Law schools, in

---

<sup>6</sup> Abraham P. Ordovery, "Teaching Sensitivity to Facts," 66 *Notre Dame L.Rev.* 813, 814 (1991).

<sup>7</sup> JEROME FRANK, *LAW AND THE MODERN MIND* xi (6th printing, 1963 ed.).

<sup>8</sup> Robert S. Marx, "Shall Law Schools Establish a Course on 'Facts'?" 5 *J. OF LEGAL EDUC.* 524 (1953); Irvin C. Rutter, "A Jurisprudence of Lawyers' Operations," 13 *J. OF*

the realists' view, ought to be Schools of Legal Problem-Solving, not just Schools of Facts or Schools of Psychology. I agree but suggest that we need not be so much "practice oriented" as "lawyer centered." I'm not concerned whether we teach the particular narrow technique of brief filing; the *mechanics* of practice are not the issue. But the *theory* of practice, as it were, *is* the issue. How a person carries out a profession ought to be central to our inquiry as teachers in schools. That says nothing about what we should engage in as scholars on our own. Individual professors should, of course, feel free to follow the muse, and hats off if they choose to write about economics or sociology or literature *and* law, or about law *simpliciter*. But when we consider what we are doing pedagogically we must do more and we must do it differently.

To this point I admit that I have been abstract. *What* facts? *What about* facts? We frequently bemoan the state of our students' knowledge about what we might call "college" facts or textbook facts. In constitutional law they demonstrate that they do not know how a bill is enacted or what impeachment means. In corporations, they do not understand the nature of the corporation or the stock it issues. We want students to come to law school with grounding in American government, economics, and history. We'd like them to know some psychology and sociology. Ignorance of these fields hampers efforts to learn many branches of law. But we do not seem to bemoan a more root ignorance: the ignorance of what the facts of the particular case are, or how to find them. At least we know where students can learn history and finance: the story of "history" may be found in a textbook. But there are no textbooks that can give us the "facts" of the cases we discuss beyond the meager statements contained in the casebooks we use. Graduate instruction in history presumably teaches the budding historian how to find the "facts" that will constitute a history: should we not do the same for the budding lawyer?

Consider an analogy to astronomy. We read that the universe is expanding. This "fact" is retailed to lay audiences in newspapers and news magazines when an astronomer discovers a far distant supernova with an unusual red shift. We are not told how the "fact" gets learned. It is not a fact like the fact that my car is parked outdoors, because we cannot observe it directly.

Therefore it is a deduced or inferred fact, a conclusion drawn from data. The process of inference isn't given us. It's derived from smudges on a photographic plate, or lines of numbers in a statistical table generated by a computer. Can you imagine not teaching the astronomy *student* that these are the data bits from which the inference to "facts" will become known? Yet that's not how we teach our law students. Instead, we ignore how the data bits are to be found and largely overlook how they drive juries, judges, lawyers, and clients to their conclusions.

These deficiencies deeply affect us. Let me repeat some stories I have heard over the years from a friend who was once the director of a legal clinic at a well known law school. (He forbids me from naming it.) One year he decided, as an experiment, to staff the clinic in the evening with well-known professors at this well-known law school. Here is how the professors handled their clients' cases.

*Client 1.* The client wanted a divorce. The lawyer-professor grilled her extensively about her husband's philandering, reducing her to tears. At the debriefing he suggested to my friend, the clinic director, that he had given his client sound advice about how to shape her pleading, by reciting the ample evidence of her husband's infidelities. Unfortunately, it turned out the professor-lawyer did not know the law of the state in which his law school was located but had in mind instead a 1920s' statute from a different state to aid him in his interrogation of a 1960s' problem. He had the law wrong, although he was doing what a lawyer should be doing.

*Client 2.* The client announced that he had to be halfway across the state the next morning for a court appearance. The professor-lawyer reached into his pocket and handed the client \$50 and sent him packing. At a debriefing later that evening, this second professor wanted to know whether the office would refund the \$50. He made absolutely no attempt to find out what the client's underlying legal problem was.

*Client 3.* The client lived in a building where electricity for her and a neighbor was billed to her on a single meter. She asked the professor-lawyer whether she could be sued if she withheld from her rent the amount of her neighbor's electricity. The professor said "yes." That was his whole answer. He did not ask for the landlord's name or phone number; he had no instinct to call the landlord and say "cut it out." He did not ask about what kind of man the landlord was and whether he would cave in to pressure.

What's going on here? We see three characteristic errors of lawyer-professors who do not attend to the real job of solving a client's problem. The first lawyer had the wrong law. Using the right law is what we actually *teach* in the law schools and his was, of course, an elementary error. The second lawyer did not bother to ask about the problem. He arrogantly assumed that something else was at stake. He did not listen to the client or probe at all. He heard what he wanted to hear. This is a deeper mistake, one that we rarely dwell on in law school. The third lawyer did not derive from the given facts an operational plan. He failed to infer the solution from the factual statement. Here the professor presumably drew some of the facts out properly, but he did not draw them all out, and he did not do anything with them. Instead, he answered like a law school professor. He was not concerned about being a lawyer but about understanding the theory of the case.

The approach of these three lawyer-professors is characteristic, I submit, of the three ways in which we fail to teach about facts. First, we think we teach, though we do not do it well, that the facts we seek will be determined in no small part by the rules that are implicated in the problem. If you have the wrong law, as our first professor-lawyer had, then you will look for the wrong facts. Second, we do not teach students that it will be their job to probe for facts. Except perhaps for the limited enrollment clinical course, we do not explain how students can dig for pertinent facts. Third, we do not teach students that as lawyers they must infer from the facts how to proceed.

How can we teach the art of the fact? How can we go beyond the standard answer that we already teach the art of the fact when we teach, as we claim to do in all our courses, the art of analysis? One answer was given by an experimenter at UCLA in the early 1950s. A 44-hour summer course consisted of the following topics: eyewitness testimony; detection of deception; confessions and interrogation methods; "correlation of proof" (we are told to read *Commonwealth v. Wentzel*, 360 Pa. 137, 61 A.2d 309 (1948), to make this clear); investigative accounting, photographic evidence; medico-legal subjects; documents; impressions and moulages; ballistics; fingerprints; spectrographic analysis; blood chemistry; alcohol effect and detection; sound and recording devices; general investigative procedures.<sup>9</sup> Now *there's* a pot-

---

<sup>9</sup> Marshall W. Houts, "A Course in Proof," 7 J. OF LEGAL EDUC. 418 (1955).



pourri. That's not what I mean by a course in facts and fact analysis, though some of the items on the list would undoubtedly be considered in any course we might devise. What's wrong with this list? The problem is that it conceives of the problem of facts as a set of specific *tasks* and *techniques* rather than as a general *issue* that cries out for its own analysis.

The issue is the abstraction we call facts that in their concrete manifestation permeate everything that lawyers do. Mastering the art of the fact requires an underlying skill that Irvin C. Rutter, a professor at the University of Cincinnati Law School, in 1961 called the skill of "fact management." As Rutter described it, various *tasks* of lawyers do not amount to different skills, but to *operations* requiring the exercise of the same skill: "In ordering the chaos, the lawyer proceeds by discovering relationships between initially unrelated segments of the picture and then placing these relationships in their further relationship to a total reality, so far as it can be seen."<sup>10</sup> Law, in this sense, is not a separate reality but a

part of the total mass of facts, albeit a special kind of facts. . . . It is not a denial of the reality of language as a prime tool of the lawyer to say that with this intimate identification with the facts, the lawyer goes beyond the words in which they have been presented to him, penetrates to the reality behind those words, and emerges with words as *he* chooses them to describe the reality as he wants others to see it. Of critical importance in guiding this process of selection and molding is that expertness in relevance to the purpose sought to be achieved, which is the crux of the "art" of being a lawyer.<sup>11</sup>

Or, as William Twining, one of the most dedicated students of the problem, has put it: "[T]he serious study of reasoning in regard to disputed matters of fact is at least as important and can be at least as intellectually demanding as the study of reasoning in respect of disputed questions of law."<sup>12</sup>

What, then, might such a course comprise? I tentatively suggest some possibilities, perhaps not ordered particularly usefully. I hope you will help me add to this laundry list and sug-

---

<sup>10</sup> Irvin C. Rutter, "A Jurisprudence of Lawyer's Operations," 13 J. OF LEGAL EDUC. 301, 317 (1961).

<sup>11</sup> *Id.* (emphasis in the original).

<sup>12</sup> William Twining, "Taking Facts Seriously," 34 J. OF LEGAL EDUC. 22, 37 (1984).

gest how the laundry list can be transmuted into a complete fashion statement.

First, we must show students how difficult it is to uncover facts, and how testimony about an event is a "fact" of a very different kind. We can do the hoary demonstration, the one that sends someone rushing into the classroom and that asks students to say immediately what they saw. We can also ask the same question a day or a week later. Moreover, we can tape these encounters, and students might even realize the taping is going on. We might wait to see how long it would take for some student to point out that the recollection is unnecessary because a tape has captured it all. Of course then we need to unearth the "facts" from the tape.

Second, we should devise means of permitting students to efficiently extract facts from a situation. The "live-client" clinics do this in an expensive way when each student undertakes to interview a witness. But we can easily provide all sorts of canned records, transcripts of testimony, documents, police reports, and the like, from which the student must sift the relevant and material from the useless and redundant.

Third, we must force students to analyze the nature of facts and to learn that facts are like animals. They come not only in different species but in different genres and families. For example, I use a simple exercise in an upperclass writing course in which students are told they are assistants to the mayor of a particular town. One of the mayor's key assistants has been involved in an automobile accident. The assistant is the head of the Mayor's Campaign against Drunk Driving, among other things. The students are given a file that consists of transcripts of an investigator's discussions with each of the witnesses to and victims of the accident; the file also contains several newspaper accounts of the accident. One of the accounts is headlined: "Drinking and Driving?" The Mayor's instructions are to write a memorandum detailing *only the facts*. The Mayor specifically instructs that he does not want to read speculation, rumor, and innuendo. Of course, it turns out that the transcripts are full of rumor, speculation, and innuendo. Moreover, the witnesses disagree on virtually everything. The record is, though, definitively devoid of any statements or other evidence that anyone had been drinking. The students have great difficulty writing this memorandum. They usually keep it very short, and predictably write in this form: "Mr. Mayor, Witness 1 says X. Witness 2 says Y," etc. Over the years, I have discovered that few—less than 10

percent—of the students will tell the mayor that *there is no evidence of drinking*. When I ask in class after the papers are turned in why the students omitted this information, I am invariably told: “That wasn’t a fact.”

Fourth, we must consider the vastly difficult problem of assessing and evaluating facts. In this same exercise, students almost never tell the mayor that the accident itself was routine, though that is the only conclusion that can be drawn. Again, students resist, saying that a conclusion is not a fact. Why isn’t it? What is a conclusion, if not a fact, although a different kind of fact from, say, the fact that the cars crashed, or the recollection that one car was traveling at 50 miles per hour? This issue is either the same as, or closely related to, the problems of inference and proof. I will not detail those problems here, but simply point to a current example: How does Microsoft’s insistence that Internet Explorer be a part of the Windows operating system “prove” that the company has violated the Sherman Act? What is the connection between individual facts that allow them to be added up to a larger truth? How are inferences drawn? When are they valid? What kind of logic or logics are at work? What is proof, anyway? Is it merely the subjective reaction of the decision maker, so that we may appeal to his emotions to get a result? Or is it something else, and what?

Fifth, we should find better, more direct, and more structured ways of teaching students how the rules they analyze are to be used to extract the facts necessary to make the case, to avoid a bad result, or to accomplish a particular objective.

Sixth, we must persuade students that the facts are not merely irreducible elements of the universe, but shards and flashes of nuance that *it is the lawyer’s task to assemble into a story that will achieve the client’s end*. This last problem, I hope you will agree, is what allows us, as writing teachers, to claim this territory for ourselves, and to wrestle with a pedagogy of facts.

\* \* \*

There have been powerful objections lodged against the suggestions that the EPF adherents and I have made. Twining discusses and answers them in his 1984 summary article, “Taking Facts Seriously.” I will not repeat his listing of the arguments and his counterarguments. Most criticisms of a proposed “fact syllabus” boil down to the claim that law schools have no time to teach “soft” skills or notions rooted in common sense that have been learned elsewhere. But these criticisms are almost

wholly beside the point: They miss the distinction between a general skill and a particular practical requirement; they underestimate the difficulty inherent in the problem; they radically assume common sense for much that has not yet been investigated; and they assume without evidence that these things have been taught elsewhere. Moreover, the tables can be turned: After all, isn't rule handling a matter, ultimately, of common sense? Yet we spend most of three years on rules handling, of detecting, understanding, distinguishing, and applying rules. Why should we do less about fact handling?

To get a flavor of the general objection, consider a short article in 1955 by Jack B. Weinstein, then an associate professor of law at Columbia. He wrote that there was no need of a separate course on facts because this subject was being (or could be) taught in its appropriate place in other courses. Weinstein pointed to three meanings of "facts skills": (1) "the ability to differentiate between facts which are and are not legally significant"; (2) "the knowledge of how courses of conduct may be planned to shape the material facts"; (3) "an awareness of how evidence of the facts may be gathered and used in litigation."<sup>13</sup>

On the first point he said: "Teaching a law student brought up on the case method the importance of differentiating the material from the immaterial would seem to be about as unnecessary as teaching an infant the importance of milk. The infant suckles to live, the student reads the facts—and I speak now of what the writer of the opinion says are the facts—and learns their relationship to the law in order to survive at the law school and later. . . . The case method is uniquely conceived and designed to build a foundation for an understanding of the relationship of facts to law and for skillful handling of facts."<sup>14</sup> Weinstein's fallacy is that it is not the student but the lawyer in the case who had to sort out the immaterial. If the lawyer was at all skillful, immaterial facts would not appear in the case at all. True, the lawyers and judges may debate about the materiality of what remains, but that's not the whole of it. Weinstein comments: "For myself, if I were satisfied that our students were fully trained to know what to look for in the way of law, and, therefore, in the way of fact, it would be enough."<sup>15</sup> That's a

---

<sup>13</sup> Jack B. Weinstein, "The Teaching of Facts Skills in Courses That Are Presently in the Curriculum," 7 J. OF LEGAL EDUC. 463, 464 (1955).

<sup>14</sup> *Ibid.* at 464-465.

<sup>15</sup> *Ibid.* at 465.

pretty big “therefore.” And, I believe, an illogical one.

On the second point, he said: “Are our law schools doing any good in [the area of teaching how to shape the facts]? To ask the question is almost to answer it. Lives there a student so dense that he leaves the course in contracts without understanding that an agreement must have consideration or equivalent if it is to have the legal effect that, presumably, he wants it to have?”<sup>16</sup> “What the student learns explicitly and implicitly is that he can control the facts in many cases to minimize the chances of litigation.”<sup>17</sup> The fallacy here is that Weinstein stated an empirical proposition but, dare I say it?, offered neither evidence nor proof. He was content with a rhetorical flourish. At least in our era we might well wonder whether the student knows what the particular “thing” is that constitutes “legal consideration.” Sure, the student knows the *rule*, and that’s all that Weinstein points to. He avoids the issue of whether one party’s muttering “I’ll try to raise the money” amounts to a binding commitment. The issue for us isn’t whether the student knows that the abstraction “consideration” is required to cause a legal effect but whether the student recognizes the abstraction in the flesh amidst a jumble of bones.

On the third point, he said: “What concerns [many teachers] is the evidence of the facts. Here, as in Plato’s image of the cave, we deal not with the facts, but with the shadows and reflections of the real world. The problem is how to catch the few distorted rays of light available and focus them for the better education of courts and juries.”<sup>18</sup> We might add that such a focus is needed not just for courts and juries, but for all those affected by the decisions for action for which a client seeks the lawyer’s help. Weinstein says that this teaching is already being done, in civil procedure and evidence courses (and even in torts and contracts). He provides a long list of rhetorical questions, his answers to which are evidently quite different from mine. He asks, for example, “[w]hat does *Hickman v. Taylor* and its progeny mean to a student if he has no inkling of investigative procedure in large corporations and small?”<sup>19</sup> Exactly, I say. We have no way of knowing whether much of what we teach means anything at all. Furthermore, as the rules have exploded in

---

<sup>16</sup> *Id.*

<sup>17</sup> *Ibid.* at 466.

<sup>18</sup> *Id.*

<sup>19</sup> *Ibid.* at 468.

number we spend more and more time on that explosion and less and less, I venture to guess, on the underlying issues.

Now professors may *think* that they are spending time on fact analysis. But in a candid moment they would likely say that the time is mostly by implication. And they can have no assurance that the implications are being learned. After all, if *implicit* time is sufficient, why not spend that time implicitly on the rules, and explicitly on something else? Why not just assume knowledge of the rule and ask how a particular problem would come out? We don't because we believe that explicit discussion is imperative. No less should we be spending time explicitly discussing the nature of the facts that constitute the legal problem and its solution.

Weinstein says "to a large extent the burden of teaching the use of facts on trial is . . . on the evidence course. Much of the detail is adverted to during the course. But it is quite true that the evidence teacher does not purport to teach the art of advocacy; rather, he emphasizes the rules and some of their psychological, legal, and social geneses and implications. An *alert* student will, however, undoubtedly get a good deal of practical insight from such traditional discussions?"<sup>20</sup> Why does the student have to be alert? What about those who are not alert?

Weinstein wrote of an evidence exam he gave "which consisted of the rambling story told by a client who had been injured in an automobile accident." He "asked the class to outline its investigative steps and the impact of the rules of evidence on the way it would prepare for trial and present the evidence expected to be revealed by such investigation. The answers showed a *surprising* carryover into the practical world."<sup>21</sup> Apparently, not even Weinstein expected the carryover. Just what is it that we are afraid of that precludes law schools from delivering instruction on these issues explicitly?

A single course may not make a difference. But a single course conjoined with a reorientation of other courses might well. My proposal is, I suggest, the exact parallel to our current experience with the teaching of writing. Writing was once, perhaps, supposed to have been taught in the regular courses, or at least absorbed in them. That didn't work, and almost every law school today has a formal first-year course in writing and research. But we are also hearing calls for "writing across the cur-

---

<sup>20</sup> *Ibid.* at 469 (emphasis added).

<sup>21</sup> *Id.* (emphasis added).

riculum”; a single writing course is not enough. For the same reason, we need “facts across the curriculum,” as well as a facts course. Weinstein asked that those who advocate the teaching of facts “continue their earnest efforts to educate the teachers of the usual substantive and procedural courses.”<sup>22</sup> We need both types of courses, and it is the writing professionals who might best be employed in the task.

I hope readers will join me in this endeavor. We need now a lively discussion about ways and means. What new course might address the art of the fact? What techniques and problems and readings can spread the inquiry across all the courses that law schools offer? How can we initiate the movement toward facts?

---

<sup>22</sup> *Ibid.* at 471.

**A Select Legal Bibliography on  
Facts, Evidence, Inference, Explanation, and Proof in the  
Legal Setting**

Compiled by JETHRO K. LIEBERMAN

- ABA Task Force on Law Schools and the Profession: Narrowing the Gap, *Legal Education and Professional Development: An Educational Continuum* (MacCrate Report) (Chicago: American Bar Assn., 1992).
- Ruggero J. Aldisert, *Logic for Lawyers: A Guide to Clear Legal Thinking* (South Bend, IN: National Institute for Trial Advocacy, 3d ed., 1997).
- Anthony G. Amsterdam, "Clinical Legal Education—a 21st-Century Perspective," 34 *J. of Leg. Educ.* 612 (1984).
- Terence Anderson and William Twining, *Analysis of Evidence: How to Do Things with Facts Based on Wigmore's Science of Judicial Proof* (Boston: Little, Brown, 1991).
- David Binder and Paul Bergman, *Fact Investigation: From Hypothesis to Proof* (St. Paul: West, 1984).
- David Binder, Paul Bergman and Susan Price, *Lawyers as Counselors: A Client-Centered Approach* (St. Paul: West, 1991).
- Peter Birks, ed., *What Are Law Schools for?* (New York: Oxford University Press, 1996).
- Gary L. Blasi, "What Lawyers Know: Lawyering Expertise, Cognitive Science, and the Functions of Theory," 45 *J. of Leg. Educ.* 313 (1995).
- Brewer, Scott, ed., *Logic, Probability, and Presumptions in Legal Reasoning* (New York: Garland, 1988).
- Paul Carrington, "Hail! Langdell!" 3 *L. & Social Inquiry* 691 (1995).
- L. Jonathan Cohen, "The Logic of Proof," 1980 *Criminal L. Rev.* 91.
- L. Jonathan Cohen, *The Probable and the Provable* (Oxford: Clarendon Press, 1977).
- Richard Eggleston, *Evidence, Proof, and Probability* (London: Weidenfeld & Nicholson, 2d ed., 1983).
- Richard Eggleston, "The Probability Debate," 1980 *Criminal L. Rev.* 678.
- Jerome Frank, *Law and the Modern Mind* (Garden City: Anchor Books, 1963 (1930)).
- Jerome Frank, "A Plea for Lawyer-Schools," 56 *Yale L. J.* 1303 (1947).



- John H. Holland and et al., *Induction: Processes of Inference, Learning, and Discovery* (Cambridge: M.I.T. Press, 1986).
- Marshall W. Houts, "A Course in Proof," 7 *J. of Leg. Educ.* 418 (1955).
- Marshall W. Houts, *From Evidence to Proof* (Springfield: C.C. Thomas, 1956).
- Edward J. Imwinkelried & Glen Weissenberger, eds., *An Evidence Anthology* (Cincinnati: Anderson, 1996).
- Laura Kalman, "To Hell with Langdell!" 20 *L. & Social Inquiry* 771 (1995).
- William LaPiana, "Honor Langdell," 20 *L. & Social Inquiry* 761 (1995).
- William LaPiana, *Logic and Experience: The Origin of Modern American Legal Education* (New York: Oxford University Press, 1994).
- Martha Rice Martini, *Marx Not Madison: The Crisis of American Legal Education* (Lanham, MD: University Press of America, 1996).
- Robert S. Marx, "Shall Law Schools Establish a Course on 'Facts?'" 5 *J. of Leg. Educ.* 524 (1953).
- Jerome Michael, *The Elements of Legal Controversy* (Brooklyn: Foundation Press, 1948).
- Jerome Michael and Mortimer Adler, "The Trial of an Issue of Fact," 34 *Col. L. Rev.* 1224 (1934).
- Jerome Michael and Mortimer J. Adler, "Real Proof: I," 5 *Van. L. Rev.* 344 (1952).
- John Monahan and Laurens Walker, *Social Science in Law* (Westbury, NY: Foundation, 4th ed., 1998).
- Charles C. Moore, *A Treatise on Facts* (Northport, NY: E. Thompson Co. 1908).
- Allen Newell and Herbert A. Simon, *Human Problem Solving* (Englewood Cliffs: Prentice-Hall, 1972).
- Abraham P. Ordovery, "Teaching Sensitivity to Facts," 66 *Notre Dame L. Rev.* 813 (1991).
- Roger C. Park; David P. Leonard; and Steven H. Goldberg, *Evidence Law: A Student's Guide to the Law of Evidence as Applied in American Trials* (St. Paul: West, 1998).
- Dennis Patterson, *Law and Truth* (New York: Oxford University Press, 1996).
- Brian L. Porto, *The Craft of Legal Reasoning* (New York: Harcourt Brace College Publishers, 1998).

- Bernard Robertson & G. A. Vignaux, "Extending the Conversation About Bayes," 13 *Cardozo L. Rev.* 629 (1991).
- Bernard Robertson & G.A. Vignaux, "Inferring Beyond Reasonable Doubt," 11 *Oxford J. of Leg. Studies* 431 (1991).
- Bernard Robertson & G.A. Vignaux, "Taking Fact Analysis Seriously," 91 *Mich. L. Rev.* 1442 (1993).
- Nancy E. Rourke, *A Difference of Reason* (Lanham, MD: University Press of America, 1996).
- Irvin C. Rutter, "A Jurisprudence of Lawyers' Operations," 13 *J. of Leg. Educ.* 301 (1961).
- John Henry Schlegel, "Damn! Langdell!" 20 *L. & Social Inquiry* 765 (1995).
- Barbara J. Shapiro, *"Beyond Reasonable Doubt" and "Probable Cause": Historical Perspectives on the Anglo-American Law of Evidence* (Berkeley: University of California Press, 1991).
- Steve Sheppard, "Casebooks, Commentaries, and Curmudgeons: An Introductory History of Law in the Lecture Hall," 82 *Iowa L. Rev.* 547 (1997).
- Symposium, "Decision and Inference in Litigation," 13 *Cardozo L. Rev.* 253 (1991).
- Symposium, "Probability and Inference in the Law of Evidence," 66 *B. U. L. Rev.* 381 (1986).
- Peter Tillers and David Schum, "Charting New Territory in Judicial Proof: Beyond Wigmore," 9 *Cardozo L. Rev.* 907 (1988).
- Arne Trankell, *Reliability of Evidence* (Stockholm: Beckman, 1972).
- William Twining, "Evidence and Legal Theory," 47 *Modern L. Rev.* 261 (1984).
- William Twining, *Rethinking Evidence: Exploratory Essays* (Oxford: Basil Blackwell, 1990).
- William Twining, "Taking Facts Seriously," 34 *J. of Leg. Educ.* 22 (1984).
- William Twining, *Theories of Evidence: Bentham and Wigmore* (Stanford: Stanford University Press, 1985).
- Jack B. Weinstein, "The Teaching of Facts Skills in Courses Presently in the Curriculum," 7 *J. of Leg. Educ.* 463 (1955).
- John H. Wigmore, "The Problem of Proof," 8 *Ill. L. Rev.* 77 (1913).
- John H. Wigmore, *The Science of Judicial Proof as Given by Logic, Psychology, and General Experience and Illustrated in Judicial Trials* (Boston: Little, Brown, 3d ed. 1937).

Glanville Williams, "The Mathematics of Proof—I," 1979 *Crim. L. Rev.* 297.

Glanville Williams, "The Mathematics of Proof—II," 1979 *Crim. L. Rev.* 340.

Steven L. Winter, "Transcendental Nonsense, Metaphoric Reasoning, and the Cognitive Stakes for Law," 137 *Penn. L. Rev.* 1105 (1989).

Frances Kahn Zemans and Victor G. Rosenblum, *The Making of a Public Profession* (Chicago: American Bar Foundation, 1981).

**A Select General Bibliography on  
Facts, Evidence, Inference, Explanation, and Proof**

Compiled by JETHRO K. LIEBERMAN

- Peter Achinstein, ed., *The Concept of Evidence* (New York: Oxford Univ. Press, 1983).
- Peter Achinstein, *The Nature of Explanation* (New York: Oxford Univ. Press, 1983).
- Thomas J. Altizer, William A. Beardslee & J. Harvey Young, eds., *Truth, Myth, and Symbol* (Englewood Cliffs, N.J.: Prentice-Hall, 1962).
- Walter Truett Anderson, ed., *The Truth About the Truth: De-Confusing and Re-Constructing the Postmodern World* (New York: G.P. Putnam's Sons, 1995).
- Karl-Otto Apel, *Understanding and Explanation: A Transcendental-Pragmatic Perspective*, trans. Georgia Warnke (Cambridge: MIT Press, 1984 (1979)).
- D.M. Armstrong, *What is a Law of Nature?* (Cambridge: Cambridge Univ. Press, 1985).
- Alfred Jules Ayer, *Language, Truth and Logic* (New York: Dover Publications, Inc., 1946 (1936)).
- Barry Barnes, *T.S. Kuhn and Social Science* (New York: Columbia Univ. Press, 1982).
- Sylvan Barnet & Hugo Bedau, *Critical Thinking, Reading, and Writing: A Brief Guide to Argument* (Boston: Bedford Books, 1993).
- John D. Barrow, *Theories of Everything: The Quest for Ultimate Explanation* (New York: Fawcett Columbine, 1991).
- Jon Barwise & John Etchemendy, *The Liar: An Essay on Truth and Circularity* (New York: Oxford Univ. Press, 1987).
- Monroe Beardsley, *Thinking Straight: Principles of Reasoning for Readers and Writers* (Englewood Cliffs: Prentice-Hall, 4th ed., 1975).
- Robert N. Bellah, *Beyond Belief: Essays on Religion in a Post-Traditionalist World* (Berkeley: Univ. of California Press, 1970).
- Peter L. Berger, *The Heretical Imperative: Contemporary Possibilities of Religious Affirmation* (Garden City: Anchor Press/Doubleday, 1979).
- Peter L. Berger & Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City: Anchor Books/Doubleday, 1967).

- David Berlinski, *Black Mischief: Language, Life, Logic, Luck* (New York: Harcourt Brace Jovanovich, 2d ed. 1988).
- Richard J. Bernstein, *Beyond Objectivism and Relativism: Science, Hermeneutics, and Praxis* (Philadelphia: Univ. of Pennsylvania Press, 1988 (1983)).
- Erwin P. Bettinghaus, *Message Preparation: The Nature of Proof* (Indianapolis: Bobbs-Merrill, 1966).
- W.I.B. Beveridge, *The Art of Scientific Investigation* (New York: Vintage Books, 1957).
- Max Black, *The Prevalence of Humbug and Other Essays* (Ithaca: Cornell Univ. Press, 1983).
- Radu J. Bogdan, ed., *Belief: Form, Content and Function* (New York: Oxford Univ. Press, 1986).
- Laurence Bonjour, *The Structure of Empirical Knowledge* (Cambridge: Harvard Univ. Press, 1985).
- Wayne C. Booth, *Now Don't Try to Reason with Me: Essays and Ironies for a Credulous Age* (Chicago: Univ. of Chicago Press, 1970).
- Reuven Brenner, *Betting on Ideas: Wars, Inventions, Inflation* (Chicago: Univ. of Chicago Press, 1985).
- Sylvain Bromberger, *On What We Know We Don't Know: Explanation, Theory, Linguistics, and How Questions Shape Them* (Chicago: Univ. of Chicago Press, 1992).
- Cleanth Brooks & Robert Penn Warren, *Modern Rhetoric* (New York: Harcourt, Brace, 2d ed., 1958).
- Harold I. Brown, *Rationality* (London: Routledge, 1990).
- C.D.B. Bryan, *Close Encounters of the Fourth Kind: Alien Abduction, UFOs, and the Conference at M.I.T.* (New York: Alfred A. Knopf, 1995).
- Edwin A. Burt, *In Search of Philosophic Understanding* (Indianapolis: Hackett, 1985 (1960)).
- Panayot Butchvarov, *Resemblance and Identity: An Examination of the Problem of Universals* (Bloomington: Indiana Univ. Press, 1966).
- Lewis Carroll, *Lewis Carroll's Symbolic Logic*, William Warren Bartley III, ed. (New York: Clarkson N. Potter, 5th ed., 1977).
- James P. Carse, *Finite and Infinite Games: A Vision of Life as Play and Possibility* (New York: Ballantine Books, 1986).
- Peter Caws, *Yorick's World: Science and the Knowing Subject* (Berkeley: Univ. of California Press, 1993).
- James K. Chandler, Arnold I. Davidson & Harry Harootunian, eds., *Questions of Evidence: Proof, Practice, and Persuasion*

- Across the Disciplines* (Chicago: Univ. of Chicago Press, 1994).
- Allan Chase, *The Legacy of Malthus: The Social Costs of the New Scientific Racism* (New York: Alfred A. Knopf, 1977).
- Christopher Cherniak, *Minimal Rationality* (Cambridge: MIT Press, 1986).
- D.S. Clarke, Jr., *Practical Inferences* (London: Routledge & Kegan Paul, 1985).
- Morris R. Cohen, *A Preface to Logic* (New York: Henry Holt, 1944).
- Morris R. Cohen & Ernest Nagel, *An Introduction to Logic*, John Corcoran, ed. (Indianapolis: Hackett, 2d ed., 1962).
- Finn Collin, *Social Reality* (London: Routledge, 1997).
- Irving M. Copi, *Symbolic Logic* (New York: Macmillan, 1954).
- K.J.W. Craik, *The Nature of Explanation* (Cambridge University Press, 1943).
- Frederick Crews et al., *The Memory Wars: Freud's Legacy in Dispute* (New York: New York Review Book, 1995).
- Antonio R. Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain* (New York: Grosset/Putnam, 1994).
- Donald Davidson, *Inquiries Into Truth and Interpretation* (Oxford: Clarendon Press/Oxford, 1986).
- James West Davidson & Mark Hamilton Lytle, *After the Fact: The Art of Historical Detection* (New York: McGraw-Hill, 1992).
- Philip J. Davis & David Park, eds., *No Way: The Nature of the Impossible* (New York: W.H. Freeman, 1987).
- Marc De Mey, *The Cognitive Paradigm: An Integrated Understanding of Scientific Development* (Chicago: Univ. of Chicago Press, 1992).
- Daniel C. Dennett, *Content and Consciousness* 1986 (London: Routledge, 2d. ed., 1993).
- Rene Dubos, *Reason Awake: Science for Man* (New York: Columbia Univ. Press, 1970).
- John Dupre, *The Disorder of Things: Metaphysical Foundations of the Disunity of Science* (Cambridge: Harvard Univ. Press, 1995).
- John Earman, ed., *Inference, Explanation, and Other Frustrations: Essays in the Philosophy of Science* (Berkeley: Univ. of California Press, 1992).
- Jon Elster, *Explaining Technical Change: A Case Study in the Philosophy of Science* (New York: Cambridge Univ. Press, 1983).

- Jon Elster, *Nuts and Bolts for the Social Sciences* (New York: Cambridge Univ. Press, 1989).
- Jon Elster, *Solomonic Judgements: Studies in the Limitations of Rationality* (Cambridge: Cambridge Univ. Press, 1989).
- Jon Elster, *Sour Grapes: Studies in the Subversion of Rationality* (Cambridge: Cambridge Univ. Press, 1985).
- Jon Elster, *Ulysses and the Sirens: Studies in Rationality and Irrationality* (Cambridge: Cambridge Univ. Press, revised ed., 1984).
- S. Morris Engel, *With Good Reason: An Introduction to Informal Fallacies* (New York: St. Martin's Press, 2d ed., 1982).
- Ronald Englefield, *Critique of Pure Verbiage: Essays on Abuses of Language in Literary, Religious, and Philosophical Writings*, ed. G.A. Wells & D. R. Oppenheimer (LaSalle, Ill.: Open Court, 1990).
- Paul Feyerabend, *Against Method* (London: Verso, 1978).
- Richard Fulkerson, *Teaching the Argument in Writing* (Urbana: National Council of Teachers of English, 1996).
- David Hackett Fischer, *Historians; Fallacies: Toward a Logic of Historical Thought* (New York: Harper & Row, 1970).
- Alec Fisher, *The Logic of Real Arguments* (Cambridge: Cambridge Univ. Press, 1988).
- Frederic Brenton Fitch, *Symbolic Logic: An Introduction* (New York: Ronald Press, 1952).
- Antony Flew, ed., *Logic and Language* (Garden City: Anchor Books, 1965).
- Jerry A. Fodor, *The Elm and the Expert: Mentalese and Its Semantics* (Cambridge: MIT Press, 1995).
- Jerry A. Fodor & Ernest Lepore, *Holism: A Shopper's Guide* (Oxford: Blackwell, 1993).
- Richard Fulkerson, *Teaching the Argument in Writing* (Urbana: National Council of Teachers of English, 1996).
- Alan Garfinkel, *Forms of Explanation: Rethinking the Questions in Social Theory* (New Haven: Yale Univ. Press, 1981).
- Richard H. Gaskins, *Burdens of Proof in Modern Discourse* (New Haven: Yale Univ. Press, 1992).
- P. T. Geatch, *Logic Matters* (Berkeley: University of California Press, 1980).
- Leonard George, *Alternative Realities: The Paranormal, the Mystic and the Transcendent in Human Experience* (New York: Facts on File, 1995).
- Clark Glymour, *Thinking Things Through* (Cambridge: MIT Press, 1992).

- Alan H. Goldman, *Empirical Knowledge* (Berkeley: Univ. of California Press, 1991 (1988)).
- Paul R. Gross & Norman Levitt, *Higher Superstition: The Academic Left and Its Quarrels with Science* (Baltimore: Johns Hopkins Univ. Press, 1994).
- Paul R. Gross, Norman Levitt & Martin W. Lewis, eds., *The Flight from Science and Reason* (New York: New York Academy of Sciences, 1996).
- Samuel D. Guttenplan & Martin Tamny, *Logic: A Comprehensive Introduction* (New York: Basic Books, 2d ed., 1978).
- Susan Haack, *Deviant Logic, Fuzzy Logic: Beyond the Formalism* (Chicago: Univ. of Chicago Press, 1996).
- Susan Haack, *Evidence and Inquiry: Towards Reconstruction in Epistemology* (Oxford: Blackwell, 1993).
- Barry Hallen & Sodip. J. Olubi, *Knowledge, Belief, and Witchcraft: Analytic Experiments in African Philosophy* (Stanford: Stanford Univ. Press, 1997).
- Oswald Hanfling, *Logical Positivism* (New York: Columbia Univ. Press, 1981).
- Charles Hanly, *The Problem of Truth in Applied Psychoanalysis* (New York: Guilford Press, 1992).
- Hans V. Hansen & Robert C. Pinto, eds., *Fallacies: Classical and Contemporary Readings* (University Park: Univ. of Pennsylvania Press, 1995).
- James F. Harris, *Against Relativism: A Philosophical Defense of Method* (LaSalle, Ill.: Open Court, 1992).
- Stephen Cade Hetherington, *Knowledge Puzzles: An Introduction to Epistemology* (Boulder: Westview, 1996).
- Wilfrid Hodges, *Logic: An Introduction to Elementary Logic* (London: Penguin, 1977).
- Eric Hoffer, *The True Believer: Thoughts on the Nature of Mass Movements* (New York: Mentor, 1958).
- John Holland et al., *Induction: Processes of Inference, Learning, and Discovery* (Cambridge, 1986).
- Martin Hollis, *Models of Man: Philosophical Thoughts on Social Action* (Cambridge: Cambridge Univ. Press, 1977).
- Keith J. Holyoak & Paul Thagard, *Mental Leaps: Analogy in Creative Thought* (Cambridge: Bradford, 1994).
- Christopher Hookway, *Scepticism* (London: Routledge, 1992).
- John Horgan, *The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age* (Reading, Mass.: Addison-Wesley, 1996).



- Patrick Hughes & George Brecht, *Vicious Circles and Infinity: A Panoply of Paradoxes* (Garden City: Doubleday & Co. 1975).
- Patrick J. Hurley, *A Concise Introduction to Logic* (Belmont, CA: Wadsworth, 1991).
- Martin Johnson, *Science and the Meanings of Truth* (London: Faber & Faber, 1946).
- Roger S. Jones, *Physics as Metaphor* (Minneapolis: Univ. of Minnesota Press, 1982).
- Albert R. Jonsen & Stephen Toulmin, *The Abuse of Casuistry: A History of Moral Reasoning* (Berkeley: Univ. of California Press, 1988).
- Horace Freeland Judson, *The Search for Solutions* (Baltimore: Johns Hopkins Univ. Press, 1987 (1980)).
- Morton A. Kaplan, *On Historical and Political Knowing* (Chicago: Univ. of Chicago Press, 1971).
- Morton A. Kaplan, *Science, Language, and the Human Condition* (New York: Paragon House, 1984).
- Gary King, Robert O. Keohane & Sidney Verba, *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton: Princeton Univ. Press, 1994).
- Dudley Knowles, ed., *Explanation and Its Limits* (Cambridge: Cambridge Univ. Press, 1990).
- Noretta Koertge, ed., *A House Built on Sand: Exposing Postmodernist Myths About Science* (New York: Oxford University Press, 1998).
- Alfred Korzybski, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics* (Lakeville, Conn.: International Non-Aristotelian Library Publishing Co., 1948).
- Bart Kosko, *Fuzzy Thinking: The New Science of Fuzzy Logic* (New York: Hyperion, 1993).
- Barbara Koslowski, *Theory and Evidence: The Development of Scientific Reasoning* (Cambridge: Bradford, 1996).
- Deanna Kuhn, *The Skills of Argument* (New York: Cambridge Univ. Press, 1991).
- Timur Kuran, *Private Truths, Public Lies: The Social Consequences of Preference Falsification* (Cambridge: Harvard Univ. Press, 1995).
- Susanne K. Langer, *An Introduction to Symbolic Logic* (New York: Dover Publications, 3d ed., 1967).
- Edward J. Larson, *Trial and Error: The American Controversy Over Creation and Evolution* (New York: Oxford Univ. Press, 1989).

- Justin Leiber, *An Invitation to Cognitive Science* (Oxford: Blackwell, 1991).
- Daniel Lerner, ed., *Evidence and Inference* (Glencoe: Free Press of Glencoe, 1959).
- Mark Levensky, ed., *Human Factual Knowledge* (Englewood Cliffs: Prentice-Hall, 1971).
- Charles E. Lindblom, *Inquiry and Change: The Troubled Attempt to Understand and Shape Society* (New Haven: Yale Univ. Press, 1990).
- Charles E. Lindblom & David K. Cohen, *Usable Knowledge: Social Science and Social Problem Solving* (New Haven: Yale Univ. Press, 1979).
- Peter Lipton, *Inference to the Best Explanation* (New York: Routledge, 1993).
- Daniel Little, *Varieties of Social Explanation: An Introduction to the Philosophy of Social Science* (Boulder: Westview, 1991).
- Genevieve Lloyd, *The Man of Reason: "Male" and "Female" in Western Philosophy* (Minneapolis: Univ. of Minnesota Press, 1984).
- Jean-Francois Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington & Brian Massumi (Minneapolis: Univ. of Minnesota Press, 1989 (1974)).
- Charles Mackay, *Extraordinary Popular Delusions and the Madness of Crowds* (New York: Crown, 1980 (1841)).
- Norman Malcolm, *Thought and Knowledge* (Ithaca: Cornell Univ. Press, 1977).
- A.E. Mander, *Logic for the Millions* (New York: Philosophical Library, 1947).
- Howard Margolis, *Paradigms and Barriers: How Habits of Mind Govern Scientific Beliefs* (Chicago: Univ. of Chicago Press, 1993).
- Howard Margolis, *Patterns, Thinking, and Cognition: A Theory of Judgment* (Chicago: Univ. of Chicago Press, 1987).
- Harold C. Martin & Richard M. Ohmann, *The Logic and Rhetoric of Exposition* (New York: Holt, Rinehart & Winston, 1963).
- Robert M. Martin, *There Are Two Errors in the the Title of This Book: A Sourcebook of Philosophical Puzzles, Paradoxes and Problems* (Peterborough, Ont.: Broadview Press, 1992).
- Deborah G. Mayo & Rachelle D. Hollander, eds., *Acceptable Evidence: Science and Values in Risk Management* (New York: Oxford Univ. Press, 1994 (1991)).

- Vann McGee, *Truth, Vagueness, and Paradox: An Essay on the Logic of Truth* (Indianapolis: Hackett, 1991).
- Lee C. McIntyre, *Laws and Explanation in the Social Sciences: Defending a Science of Human Behavior* (Boulder: Westview, 1996).
- Peter Medawar, *Pluto's Republic* (New York: Oxford Univ. Press, 1984).
- Eugene J. Meehan, *Explanation in Social Science* (Homewood, Ill.: Dorsey Press, 1968).
- Allan Megill, ed., *Rethinking Objectivity* (Durham: Duke University Press, 1994).
- C. J. Misak, *Verificationism: Its History and Prospects* (London: Routledge, 1995).
- Philip & Phylis Morrison, *The Ring of Truth: An Inquiry Into How We Know What We Know* (New York: Random House, 1987).
- Paul K. Moser, ed., *Empirical Knowledge: Readings in Contemporary Epistemology* (Totowa, NJ: Rowman & Littlefield, 1986).
- Paul K. Moser, *Knowledge and Evidence* (New York: Cambridge Univ. Press, 1991 (1989)).
- Thomas Nagel, *The Last Word* (New York: Oxford University Press, 1998).
- Otto Neurath, Rudolf Carnap & Charles Morris, eds., *Foundations of the Unity of Science; Toward an International Encyclopedia of Unified Science* (Chicago: Univ. of Chicago Press, 1970).
- Allen Newell and Herbert A. Simon, *Human Problem Solving* (Englewood Cliffs: Prentice-Hall, 1972).
- Christopher Norris, *Reclaiming Truth: Contributions to a Critique of Cultural Relativism* (Durham: Duke Univ. Press, 1996).
- F.S.C. Northrop, *The Logic of the Sciences and the Humanities* (New York: Meridian Books, 1959).
- Robert Nozick, *The Nature of Rationality* (Princeton: Princeton Univ. Press, 1993).
- David Nyberg, *The Varnished Truth: Truth Telling and Deceiving in Ordinary Life* (Chicago: Univ. of Chicago Press, 1993).
- Andrea Nye, *Words of Power: A Feminist Reading of the History of Logic* (New York: Routledge, 1990).
- Charles E. Osgood, George J. Suci & Percy H. Tannenbaum, *The Measurement of Meaning* (Urbana: Univ. of Illinois Press, 1967).

- George S. Pappas & Marshall Swain, *Essays on Knowledge and Justification* (Ithaca: Cornell Univ. Press, 1978).
- John Allen Paulos, *I Think, Therefore I Laugh* (New York: Vintage Books, 1990 (1985)).
- Stephen C. Pepper, *World Hypotheses, A Study in Evidence* (Berkeley: Univ. of California Press, 1961).
- Ray Jr. Perkins, *Logic and Mr. Limbaugh: A Dittohead's Guide to Fallacious Reasoning* (Chicago: Open Court, 1995).
- Massimo Piattelli-Palmarini, *Inevitable Illusions: How Mistakes of Reason Rule Our Minds*, trans. Massimo Piattelli-Palmarini & Keith Botsford (New York: John Wiley & Sons, 1994).
- Benjamin Pinkel, *The Existential Adventure: The Rules of Science and Belief* (Marina del Rey, Calif.: DeVorss & Co., 1976).
- Joseph C. Pitt, ed., *Theories of Explanation* (New York: Oxford Univ. Press, 1988).
- Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (New York: Harper Torchbooks, 1964).
- Nelson W. Polsby, *Community Power and Political Theory: A Further Look at Problems of Evidence and Inference* (New Haven: Yale Univ. Press, 1980).
- Richard H. Popkin, *The History of Skepticism from Erasmus to Spinoza* (Berkeley: Univ. of California Press, 1979).
- Karl Popper, *Objective Knowledge: An Evolutionary Approach*, revised (Oxford: Oxford Univ. Press, 1979).
- Dale H. Porter, *The Emergence of the Past: A Theory of Historical Explanation* (Chicago: Univ. of Chicago Press, 1981).
- Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton Univ. Press, 1995).
- William Poundstone, *Labyrinths of Reason: Paradox, Puzzles, and the Frailty of Knowledge* (New York: Anchor Press, 1988).
- William Poundstone, *Prisoner's Dilemma* (New York: Doubleday, 1992).
- Philip J. Regal, *The Anatomy of Judgment* (Minneapolis: Univ. of Minnesota Press, 1990).
- Hans Reichenbach, *Elements of Symbolic Logic* (New York: Free Press, 1947).
- Hans Reichenbach, *The Rise of Scientific Philosophy* (Berkeley: Univ. of California Press, 1951).

- Charles E. Rosenberg, *No Other Gods: On Science and American Social Thought* (Baltimore: Johns Hopkins Univ. Press, 1997).
- Annette T. Rottenberg, *Elements of Argument* (New York: St. Martin's Press, 1985).
- Annette T. Rottenberg, *The Structure of Argument* (Boston: Bedford Books, 1994).
- Gilbert Ryle, *The Concept of Mind* (New York: Univ. Paperbacks/Barnes & Noble, 1949).
- R. M. Sainsbury, *Paradoxes* (Cambridge: Cambridge Univ. Press, 1988).
- Wesley C. Salmon, *Four Decades of Scientific Explanation* (Minneapolis: Univ. of Minnesota Press, 1990).
- Wesley C. Salmon, *Scientific Explanation and the Causal Structure of the World* (Princeton: Princeton Univ. Press, 1984).
- Heinrich Schulz, *Concise History of Logic* (New York: Philosophical Library, 1961).
- Ted Schultz, ed., *The Fringes of Reason: A Whole Earth Catalogue* (New York: Harmony Books, 1989).
- John R. Searle, *The Construction of Social Reality* (New York: Free Press, 1995).
- Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: Univ. of Chicago Press, 1991).
- Patrick Shaw, *Logic and Its Limits* (New York: Oxford Univ. Press, 2nd ed., 1997).
- Michael Shermer, *Why People Believe Weird Things: Pseudoscience, Superstition, and Other Confusions of Our Time* (New York: W. H. Freeman, 1997).
- Barbara Herrnstein Smith, *Belief and Resistance: Dynamics of Contemporary Intellectual Controversy* (Cambridge: Harvard Univ. Press, 1997).
- Raymond Smullyan, *5000 B.C. and Other Philosophical Fantasies* (New York: St. Martin's Press, 1983).
- Raymond Smullyan, *Forever Undecided: A Puzzle Guide to Gödel* (New York: Quality Paperback Book Club, 1992 (1987)).
- Raymond Smullyan, *The Lady or the Tiger?: And Other Logic Puzzles* (New York: Quality Paperback Book Club, 1992 (1982)).
- Raymond Smullyan, *Satan, Cantor, and Infinity: And Other Mind-Boggling Puzzles* (New York: Alfred A. Knopf, 1992).

- Raymond M. Smullyan, *This Book Needs No Title: A Budget of Living Paradoxes* (New York: Simon & Schuster (Touchstone), 1986 (1980)).
- Raymond M. Smullyan, *What is the Name of This Book?: The Riddle of Dracula and Other Logical Puzzles* (Englewood Cliffs: Prentice-Hall, 1978).
- Alan Sokal and Jean Bricmont, *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science* (New York: Picador, 1998).
- Douglas Stalker, ed., *Grue! the New Riddle of Induction* (Chicago: Open Court, 1994).
- L. Susan Stebbing, *Thinking to Some Purpose* (Harmondsworth: Penguin, 1939).
- P. F. Strawson, ed., *Philosophical Logic* (New York: Oxford Univ. Press, 1967).
- Frederick Suppe, ed., *The Structure of Scientific Theories* (Urbana: Univ. of Illinois Press, 2d ed., 1977).
- Patrick Suppes, *Introduction to Logic* (Princeton: D. Van Nostrand, 1957).
- Stuart Sutherland, *Irrationality: Why We Don't Think Straight!* (New Brunswick: Rutgers Univ. Press, 1994).
- Alfred Tarski, *Introduction to Logic and to the Methodology of Deductive Sciences* (New York: Oxford Univ. Press, 3rd ed., 1965).
- Paul Thagard, *Conceptual Revolutions* (Princeton: Princeton Univ. Press, 1992).
- Stephen Toulmin, *Human Understanding: The Collective Use and Evolution of Concepts* (Princeton: Princeton Univ. Press, 1972).
- Stephen Toulmin, *The Uses of Argument* (Cambridge: Cambridge Univ. Press, 1969 (1958)).
- Arne Trankle, *Reliability of Evidence* (Stockholm, 1972).
- Stephen Turner, *The Social Theory of Practices: Tradition, Tacit Knowledge, and Presuppositions* (New Haven: Yale Univ. Press, 1994).
- Ronald G. Walters, ed., *Scientific Authority and Twentieth-Century America* (Baltimore: Johns Hopkins Univ. Press, 1997).
- Douglas N. Walton, *Informal Logic: A Handbook for Critical Argumentation* (New York: Cambridge Univ. Press, 1989).
- Douglas N. Walton, *The Place of Emotion in Logic* (University Park, PA: Pennsylvania State Univ. Press, 1992).

- Mary Warnock, *Imagination* (Berkeley: Univ. of California Press, 1978 (1976)).
- Harry L. Weinberg, *Levels of Knowing and Existence: Studies in General Semantics* (New York: Harper & Row, 1959).
- Andrew D. White, *A History of the Warfare of Science with Theology in Christendom* (New York: George Braziller, 1955 (1895)).
- Charles Arthur Willard, *Liberalism and the Problem of Knowledge: A New Rhetoric for Modern Democracy* (Chicago: Univ. of Chicago Press, 1996).
- Michael Williams, *Unnatural Doubts: Epistemological Realism and the Basis of Scepticism* (Princeton: Princeton Univ. Press, 1996).
- Peter Winch, *The Idea of a Social Science: and its Relation to Philosophy* (London: Routledge & Kegan Paul, 1958).
- Michael Zimmerman, *Science, Nonscience, and Nonsense: Approaching Environmental Literacy* (Baltimore: Johns Hopkins Univ. Press, 1995).