A PERSPECTIVE ON TEACHER KNOWLEDGE

As we have begun to probe the complexities of teacher understanding and transmission of content knowledge, the need for a more coherent theoretical framework has become rapidly apparent. What are the domains and categories of content knowledge in the minds of teachers? How, for example, are content knowledge and general pedagogical knowledge related? In which forms are the domains and categories of knowledge represented in the minds of teachers? What are promising ways of enhancing acquisition and development of such knowledge? Because I see these as among the central questions for disciplined inquiry into teacher education, I will now turn to a discussion of some ways of thinking about one particular domain—content knowledge in teaching—and some of the categories within it.

How might we think about the knowledge that grows in the minds of teachers, with special emphasis on content? I suggest we distinguish among three categories of content knowledge: (a) subject matter content knowledge, (b) pedagogical content knowledge, and (c) curricular knowledge.

Content Knowledge. This refers to the amount and organization of knowledge per se in the mind of the teacher. We already have a number of ways to represent content knowledge: Bloom's cognitive taxonomy, Gagne's varieties of learning, Schwab's distinction between substantive and syntactic structures of knowledge, and Peters' notions that parallel Schwab's.

In the different subject matter areas, the ways of discussing the content structure of knowledge differ. To think properly about content knowledge requires going beyond knowledge of the facts or concepts of a domain. It requires understanding the structures of the subject matter in the manner defined by such scholars as Joseph Schwab. (See his collected essays, 1978.) For Schwab, the structures of a subject include both the substantive and the syntactic structures. The substantive structures are the variety of ways in which the basic concepts and principles of the discipline are organized to incorporate its facts. The syntactic structure of a discipline is the set of ways in which truth or falsehood, validity or invalidity, are established. When there exist competing claims regarding a given phenomenon, the syntax of a discipline provides the rules for determining which claim has greater warrant. A syntax is like a grammar. It is the set of rules for determining what is legitimate to say in a disciplinary domain and what "breaks" the rules.

Teachers must not only be capable of defining for students the accepted truths in a domain. They must also be able to explain why a particular proposition is deemed warranted, why it is worth knowing, and how it relates to other propositions, both within the discipline and without, both in theory and in practice. Thus, the biology teacher must
understand that there are a variety of ways of organizing the discipline. Depending on the preferred color of one's BSCS text, biology may be formulated as (a) a science of molecules from which one aggregates up to the rest of the field, explaining living phenomena in terms of the principles of their constituent parts; (b) a science of ecological systems from which one disaggregates down to the smaller units, explaining the activities of individual units by virtue of the larger systems of which they are a part; or (c) a science of biological organisms, those most familiar of analytic units, from whose familiar structures, functions, and interactions one weaves a theory of adaptation. The well-prepared biology teacher will recognize these and alternative forms of organization and the pedagogical grounds for selecting one under some circumstances and others under different circumstances.

The same teacher will also understand the syntax of biology. When competing claims are offered regarding the same biological phenomenon, how has the controversy been adjudicated? How might similar controversies be adjudicated in our own day? We expect that the subject matter content understanding of the teacher be at least equal to that of his or her lay colleague, the mere subject matter major. The teacher need not only understand that something is so; the teacher must further understand why it is so, on what grounds its warrant can be asserted, and under what circumstances our belief in it's justification can be weakened and even denied. Moreover, we expect the teacher to understand why a given topic is particularly central to a discipline whereas another may be somewhat peripheral. This will be important in subsequent pedagogical judgments regarding relative curricular emphasis.

**Pedagogical Content Knowledge.** A second kind of content knowledge is pedagogical knowledge, which goes beyond knowledge of subject matter per se to the dimension of subject matter knowledge for teaching. I still speak of content knowledge here, but of the particular form of content knowledge that embodies the aspects of content most germane to its teachability.

Within the category of pedagogical content knowledge I include, for the most regularly taught topics in one's subject area, the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations—in a word, the ways of representing formulating the subject that make it comprehensible to others. Since there are no single most powerful forms of representation, the teacher must have at hand a veritable armamentarium of alternative forms of representation, some of which derive from research whereas others originate in the wisdom of practice. Pedagogical content knowledge also includes an understanding of what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons. If those preconceptions are misconceptions, which they so often are, teachers need knowledge of the strategies most likely to be fruitful in reorganizing the understanding of learners, because those learners are unlikely to appear before them as blank slates.

Here, research on teaching and on learning coincide most closely. The study of student
misconceptions and their influence on subsequent learning has been among the most fertile topics for cognitive research. We are gathering an ever-growing body of knowledge about the misconceptions of students and about the instructional conditions necessary to overcome and transform those initial conceptions. Such research-based knowledge, an important component of the pedagogical understanding of subject matter, should be included at the heart of our definition of needed pedagogical knowledge.

**Curricular Knowledge.** If we are regularly remiss in not teaching pedagogical knowledge to our students in teacher education programs, we are even more delinquent with respect to the third category of content knowledge, curricular knowledge. The curriculum is represented by the full range of programs designed for the teaching of particular subjects and topics at a given level, the variety of instructional materials available in relation to those programs, and the set of characteristics that serve as both the indications and contraindications for the use of particular curriculum or program materials in particular circumstances.

The curriculum and its associated materials are the materia medica of pedagogy, the pharmacopeia from which the teacher draws those tools of teaching that present or exemplify particular content and remediate or evaluate the adequacy of student accomplishments. We expect the mature physician to understand the full range of treatments available to ameliorate a given disorder, as well as the range of alternatives for particular circumstances of sensitivity, cost, interaction with other interventions, convenience, safety, or comfort. Similarly, we ought to expect that the mature teacher possesses such understandings about the curricular alternatives available for instruction.

How many individuals whom we prepare for teaching biology, for example, understand well the materials for that instruction, the alternative texts, software, programs, visual materials, single concept films, laboratory demonstrations, or "invitations to enquiry?" Would we trust a physician who did not really understand the alternative ways of dealing with categories of infectious disease, but who knew only one way?

In addition to the knowledge of alternative curriculum materials for a given subject or topic within a grade, there are two additional aspects of curricular knowledge. I would expect a professional teacher to be familiar with the curriculum materials under study by his or her students in other subjects they are studying at the same time. This lateral curriculum knowledge (appropriate in particular to the work of junior and senior high school teachers) underlies the teacher's ability to relate the content of a given course or lesson to topics or issues being discussed simultaneously in other classes.

The vertical equivalent of that curriculum knowledge is familiarity with the topics and issues that have been and will be taught in the same subject area during the preceding and later years in school, and the materials that embody them.

**Content Examinations.** What might the expectation that our teachers possess these varieties of content knowledge entail for the assessment of teacher competence? If such a conception of teacher knowledge were to serve as the basis for a subject matter content
examination for teachers, that examination would measure deep knowledge of the content and structures of a subject matter, the subject and topic-specific pedagogical knowledge associated with the subject matter, and the curricular knowledge of the subject.

We would have a form of examination that would be appropriate for assessing the capacities of a professional. It would not be a mere subject matter examination. It would ask questions about the most likely misunderstandings of photosynthesis among preadolescents, for example, and the strategies most likely to be useful in overcoming those difficulties. As such, it could distinguish between a biology major and a biology teacher, and in a pedagogically relevant and important way. It would be much tougher than any current examination for teachers.  

FORMS OF KNOWLEDGE
A conceptual analysis of knowledge for teachers would necessarily be based on a framework for classifying both the domains and categories of teacher knowledge, on the one hand, and the forms for representing that knowledge, on the other. I would like to suggest three forms of teacher knowledge: propositional knowledge, case knowledge, and strategic knowledge.

Recall that these are "forms" in which each of the general domains or particular categories of knowledge previously discussed—content, pedagogy, and curriculum—may be organized. (There are clearly other important domains of knowledge as well, for example, of individual differences among students, of generic methods of classroom organization and management, of the history and philosophy of education, and of school finance and administration, to name but a few. Each of these domains is subdivided into categories and will be expressible in the forms of knowledge to be discussed here.)

Much of what is taught to teachers is in the form of propositions. When we examine the research on teaching and learning and explore its implications for practice, we are typically (and properly) examining propositions. When we ask about the wisdom of practice, the accumulated lore of teaching experience, we tend to find such knowledge stored in the form of propositions as well. The research-based principles of active teaching, reading for comprehension, and effective schools are stated as lists of propositions. The experience-based recommendations of planning five-step lesson plans, never smiling until Christmas, and organizing three reading groups are posed as sets of propositions. In fact, although we often present propositions one at a time, we recognize that they are better understood if they are organized in some coherent form, lodged in a conceptual or theoretical framework that is generative or regenerative. Otherwise they become terribly difficult to recall or retrieve. (The experimental studies of teaching effectiveness have been guilty of presenting lengthy lists of research-based behaviors for teachers to practice, without always providing a rationale or conceptual framework for the set.)

I will argue that there are fundamentally three types of propositional knowledge in teaching, corresponding to the three major sources of knowledge about teaching:
disciplined empirical or philosophical inquiry, practical experience, and moral or ethical reasoning. I will refer to these three types of propositions as principles, maxims, and norms.

A principle typically derives from empirical research. One of my favorites is "Ordered turns are associated with higher achievement gains than are random turns in first grade reading groups" (Anderson, Evertson, & Brophy, 1979). The teaching and school effectiveness literatures contain many examples of useful principles for teaching.

The second kind of proposition makes not a theoretical claim, but a practical one. In every field of practice there are ideas that have never been confirmed by research and would, in principle, be difficult to demonstrate. Nevertheless, these maxims represent the accumulated wisdom of practice, and in many cases are as important a source of guidance for practice as the theory or empirical principles. "Never smile until Christmas" would qualify as such a maxim, as would "Break a large piece of chalk before you use it for the first time, to prevent squeaking against the board."

The third kind of proposition reflects the norms, values, ideological or philosophical commitments of justice, fairness, equity, and the like, that we wish teachers and those learning to teach to incorporate and employ. They are neither theoretical nor practical, but normative. They occupy the very heart of what we mean by teacher knowledge. These are propositions that guide the work of a teacher, not because they are true in scientific terms, or because they work in practical terms, but because they are morally or ethically right. The admonitions to provide each student with equal opportunity for turn-taking, or not to embarrass a child in front of peers, are examples of normative knowledge.

The representation of knowledge in the form of propositions has both a distinct advantage and a significant liability. Propositions are remarkably economical in form, containing and simplifying a great deal of complexity. The weakness of propositions is twofold. First, they become very hard to remember, especially as they aggregate into long lists. This is where theoretical frameworks as intellectual scaffoldings become indispensable. Second, they gain their economy precisely because they are decontextualized, stripped down to their essentials, devoid of detail, emotion, or ambience. Yet, to be remembered and then wisely used, it is precisely the detail and the context that may be needed.

Although principles are powerful, they are not particularly memorable, rendering them a problem to apply in particular circumstances. How does a teacher apply, for example, the principle "check for understanding," certainly among the most important in the direct instruction and the active teaching research bases? For these reasons, I am proposing that we look seriously at the usefulness of a second type of knowledge, a necessary complement to knowledge of propositions, case knowledge.

The roots of the "case method" in the teaching of law in this country, certainly the best known approach to employing cases as vehicles for professional education, lie in their value for teaching theory, not practice. Christopher Columbus Langdell, who became
Dean of the Harvard University Law School in 1870 responsible for advancing the case method of legal education. His rationale for employing this method was not its value as a way of teaching methods or approaches to practice. He believed that if practice were the essence of law, it had no place in a university. Instead, he advocated the case method of legal education because of its effectiveness in teaching law as science in teaching legal theory through cases.

A case, properly understood, is not simply the report of an event or incident. To call something a case is to make a theoretical claim—to argue that it is a "case of something," or to argue that it is an instance of a larger class. A red rash on the face is not a case of something until the observer has invoked theoretical knowledge of disease. A case of direct instruction or of higher-order questioning is similarly a theoretical assertion. I am therefore not arguing that the preparation of teachers be reduced to the most practical and concrete; rather, using the power of a case literature to illuminate both the practical and the theoretical, I argue for development of a case literature whose organization and use will be profoundly and self-consciously theoretical.

Case knowledge is knowledge of specific, well-documented, and richly described events. Whereas cases themselves are reports of events or sequences of events, the knowledge they represent is what makes them cases. The cases may be examples of specific instances of practice—detailed descriptions of how an instructional event occurred—complete with particulars of contexts, thoughts, and feelings. On the other hand, they may be exemplars of principles, exemplifying in their detail a more abstract proposition or theoretical claim.

Parallel to my argument that there are three types of propositional knowledge of teaching principles, maxims and norms—I shall propose three types of cases. Prototypes exemplify theoretical principles. Precedents capture and communicate principles of practice or maxims. Parables convey norms or values. Naturally, a given case can accomplish more than a single function; it can, for example, serve as both prototype and precedent.

We are probably most accustomed to thinking of cases as precedents. Knowledge of how a particular teacher taught a particular lesson, or the way a teacher brought a classroom of misbehaving youngsters under control sticks in our minds. These remembrances of teachings past are valuable in guiding the work of a teacher, both as a source for specific ideas and as a heuristic to stimulate new thinking. But other kinds of cases exemplify, illustrate, and bring alive the theoretical propositions that are potentially the most powerful tools teachers can have. These are the prototypes within case knowledge. For example, when pharmacology is taught, specific drugs are often used as illustrations. The drugs selected for that purpose are not necessarily the most frequently used in practice. Instead, prototypes are selected that exemplify in their performance the mechanisms of action most characteristic of the class of drugs they represent. They are thus theoretically interesting cases for teaching purposes.

As part of an extensive interview study with teachers reputed to be excellent managers of
classroom behavior problems, J. Brophy (personal communication, 1981) has reported the following case: A teacher was confronted with repeated incidents of students coming to class without pencils. Rather than either supplying them with replacements (thus making it possible for them to keep up with their work, although running the risk of reinforcing their poor habits) or forcing them to sit through the lesson without benefit of participation, the following strategy was reported. The teacher kept a box of very short pencil stubs in his desk. Whenever a student approached who had forgotten to bring a pencil, the teacher produced the shortest stub available and lent it to the student, who was then expected to use it in completing all of that day's work. In addition to serving as a fine classroom management precedent, this case can also serve as a memorable prototype for the principle of avoiding the inadvertent reinforcement of maladaptive behavior.

Parallel to the theoretical use of prototype cases and the practical use of precedents, we also encounter the moral or normative value of parables. A parable is a case whose value lies in the communication of values and norms, propositions that occupy the very heart of teaching as profession and as craft. Moreover, if we look at the recent literature on effective organizations and what keeps them working well and their members collaborating enthusiastically, we discover the importance of myths in organizations—tales about heroic figures or memorable events that somehow capture the values of those organizations and communicate them to everyone working within them. Those myths, I would argue, or their case equivalents—pedagogical parables—would be equally important in the socialization of teachers into their general professional obligations as well as into the special ethos of particular schools or districts as organizations.

The identification of case knowledge, a case literature, and case-based teacher education as central elements in our discussions and inquiries produces a rich and vital agenda for research. What is involved in the elevation of an event into a case? How are cases aggregated into case knowledge, or alternatively, how does knowledge of cases become case knowledge? How does one learn from and use cases in teaching? If the conception of propositional knowledge is deductive, where applications are deduced from general propositions, how is the analogical reasoning from cases learned, practiced, and tuned? Can we learn from other disciplines or professions such as law or architecture, where analogical reasoning from cases is much more typical, how to conceive of and use case knowledge in education? Why are cases memorable? Is it because they are organized as stories, reflecting the grammar of narrative forms of discourse, that makes them more readily stored, ordered and retrieved than their expository or propositional analogues?4

Another reason that these conceptions of case knowledge may be timely is the shift of research paradigms currently underway in our field. We are developing well-reasoned, methodologically sophisticated, and logically argued approaches to the use of qualitative methods and case studies to parallel our already developed approaches of correlational and experimental inquiry. These newer approaches introduce both a new kind of data about which to reason and new modes of reasoning themselves. As Geertz (1983) has observed, "Inquiry is directed at cases or sets of cases, and toward the particular features that mark them off . . ." (p. 22). As these approaches grow in their educational applications, we will begin to develop a more extensive case literature, as well as a
pool of scholars and reflective practitioners capable of preparing and interpreting cases.

Cases are documented (or portrayed) occasions or sets of occasions with their boundaries marked off, their borders drawn. What a given occasion is "a case of" is not immediately apparent from the account itself. Generalizability does not inhere in the case, but in the conceptual apparatus of the explicator. An event can be described; a case must be explicated, interpreted, argued, dissected, and reassembled. A case of Budweiser is marked off from other cases (or non-cases) by physical attributes that are immediately visible. But a case of direct instruction, or of teacher expectations, or of student misconception, is a theoretical construction. Hence, there is no real case knowledge without theoretical understanding. What passes for a theoretical case knowledge is mere anecdote, a parable without a moral.

I am not offering herein an argument against the conception of teaching as skill. I am instead arguing for its insufficiency—its incompleteness as an account of teaching ability and performance. We are only half way toward understanding the knowledge base of teaching when characterizing a research-based conception of the skills of teaching. This account must be complemented by a conception of teaching in which the principled skills and the well studied cases are brought together in the development and formation of strategic pedagogical knowledge.

I have referred to strategic knowledge as the third "form" of teacher knowledge. Both propositions and cases share the burden of unilaterality, the deficiency of turning the reader or user toward a single, particular rule or practical way of seeing. Strategic knowledge comes into play as the teacher confronts particular situations or problems, whether theoretical, practical, or moral, where principles collide and no simple solution is possible. Strategic knowledge is developed when the lessons of single principles contradict one another, or the precedents of particular cases are incompatible. From Rowe's (1974) research on wait-time, for example, we learn the principle that longer wait-times produce higher levels of cognitive processing. Yet Kounin's (1970) research on classroom management warns the teacher against slowing the pace of the classroom too severely lest the frequency of discipline problems increase. How can the principle of longer wait-times and that of quicker pacing both be correct?

It is in the very nature of the practical or policy fields that individual principles are fated to clash on particular occasions. Knowledge of the relevant propositions and cases is needed to form the underlying knowledge base. Strategic knowledge must be generated to extend understanding beyond principle to the wisdom of practice. We generally attribute wisdom to those who can transcend the limitations of particular principles or specific experiences when confronted by situations in which each of the alternative choices appears equally "principled." Novice bridge players rapidly learn the principles of the game, embodied in such maxims as "Lead fourth highest from your longest and strongest suit," and "Never lead away from a king." But when you must lead away from a king to lead fourth highest, then propositional knowledge alone becomes limited in value. Strategic knowledge (or judgment) is then invoked. 5
I envision the use of case method in teacher education, whether in our classrooms or in special laboratories with simulations, videodisks and annotated scripts, as a means for developing strategic understanding, for extending capacities toward professional judgment and decision-making. These methods of instruction would involve the careful confrontation of principles with cases, of general rules with concrete documented events—a dialectic of the general with the particular in which the limits of the former and the boundaries of the latter are explored (Shulman, 1984). What happens when cases are applied to principles or principles to cases? What happens when two principles are in conflict, or when two cases yield contradictory interpretations?

When strategic understanding is brought to bear in the examination of rules and cases, professional judgment, the hallmark of any learned profession, is called into play. What distinguishes mere craft from profession is the indeterminacy of rules when applied to particular cases. The professional holds knowledge, not only of how the capacity for skilled performance—but of what and why. The teacher is not only a master of procedure but also of content and rationale, and capable of explaining why something is done. The teacher is capable of reflection leading to self-knowledge, the metacognitive awareness that distinguishes draftsman from architect, bookkeeper from auditor. A professional is capable not only of practicing and understanding his or her craft, but of communicating the reasons for professional decisions and actions to others (see Shulman, 1983).

This sort of reflective awareness of how and why one performs complicates rather than simplifies action and renders it less predictable and regular. During the eight years that I attended the University of Chicago, I often took classes near Swift Hall, the theology building. On the side of that hall, facing me as I left my classroom building, a saying was carved in the stone: "You shall know the truth and the truth shall make you free." I suppose I never really understood those lines until I realized the implications of knowledge, of deep understanding, for the predictability and uniformity of behavior.

Reinforcement and conditioning guarantee behavior, and training produces predictable outcomes; knowledge guarantees only freedom, only the flexibility to judge, to weigh alternatives, to reason about both ends and means, and then to act while reflecting upon one's actions. Knowledge guarantees only grounded unpredictability, the exercise of reasoned judgment rather than the display of correct behavior. If this vision constitutes a serious challenge to those who would evaluate teaching using fixed behavioral criteria (e.g., the five-step lesson plan), so much the worse for those evaluators. The vision I hold of teaching and teacher education is a vision of professionals who are capable not only of acting, but of enacting—of acting in a manner that is self-conscious with respect to what their act is a case of, or to what their act entails. The implications of our discussion are several. First, we can begin to conceive differently of how professional examinations for teachers might be organized and constructed. I firmly believe that we must develop professional examinations for teachers, though their existence will constitute no panacea. They must be defined and controlled by members of the profession, not by legislators or laypersons. They must reflect an understanding that both content and process are needed by teaching professionals, and within the content we must include knowledge of the structures of
one's subject, pedagogical knowledge of the general and specific topics of the domain, and specialized curricular knowledge. Ultimately, that knowledge must be informed by a well-organized and codified case literature. Those tests will be useful when only those who have been professionally prepared as teachers are likely to pass them because they tap the unique knowledge bases of teaching. We are already well on our way to defining such a knowledge base. I envision the design of research-based programs of teacher education that grow to accommodate our conceptions of both process and content. These programs will articulate with and build upon instruction in the liberal arts and sciences as well as the specialty content areas of each candidate. Instructions in the liberal arts and content areas will have to improve dramatically to meet the standards of understanding required for teaching. If these are special sections of such courses for teachers, they will entail evaluation of subject-matter treatment, not watering down. Such programs will draw upon the growing research on the pedagogical structure of student conceptions and misconceptions, on those features that make particular topics easy or difficult to learn. They will extensively employ a growing body of case literature, both to represent a far wider and more diverse range of teaching contexts than can possibly be experienced within any one teacher education program, and to provide teachers with a rich body of prototypes, precedents, and parables from which to reason.

The fact that we do not possess such a case literature at this time suggests new agendas for research in teacher education. In addition to the obvious tack of encouraging the continued growth of disciplined case studies of teaching by scholars, another alternative suggests itself. Fred Erickson has noted that one of the exciting features of case studies is that you don't necessarily have to be a PhD social scientist or educator to learn to prepare useful case materials. Given proper preparation and support, teachers and teacher educators can contribute to the case literature themselves. As they do so, they will begin to feel even more membership in the broader academic guild of professional teachers.

We reject Mr. Shaw and his calumny. With Aristotle we declare that the ultimate test of understanding rests on the ability to transform one's knowledge into teaching. Those who can, do. Those who understand, teach.

Notes

... 2. There is also pedagogical knowledge of teaching—as distinct from subject matter—which is also terribly important, but not the object of discussion in this paper. This is the knowledge of generic principles of classroom organization and management and the like that has quite appropriately been the focus of study in most recent research on teaching. I have no desire to diminish its importance. I am simply attempting to place needed emphasis on the hitherto ignored facets of content knowledge.

3. Although in this paper I discuss aspects of content knowledge (including content-specific pedagogical knowledge and curricular knowledge) exclusively, a proper professional board examination would
include other equally important sections as well. These would assess knowledge of general pedagogy, knowledge of learners and their backgrounds, principles of school organization, finance and management, and the historical, social, and cultural foundations of education among many more. Exams would also tap teaching performance and other capabilities unlikely to be adequately assessed using conventional paper-and-pencil instruments. Discussion of the character of a professional board for teachers and its desirability, however, is appropriate for another paper.

4. I must also acknowledge some potential disadvantages of cases as sources of teacher knowledge. Kahneman, Slovic, and Tversky (1982) have pointed out the potentially misleading character of cases. They refer to the memorable quality of vivid cases as significant sources of bias in reasoning. Both availability and representativeness are characteristics of cases that make them readily retrieved from memory; they also bias the decisionmaker's estimates of the frequency of their occurrence. The important test of a case is its contrast with other cases and its examination in the light of principles. Such disciplined evaluation of cases can temper the inappropriate inferences that might be drawn from cases without diminishing their other virtues.

5. It may well be that what I am calling strategic knowledge in this paper is not knowledge in the same sense as propositional and case knowledge. Strategic "knowing" or judgment may simply be a process of analysis, of comparing and contrasting principles, cases, and their implications for practice. Once such strategic processing has been employed, the results are either stored in terms of a new proposition (e.g., "Smiling before Christmas may be permissible when . . .") or a new case. These then enter the repertoire of cases and principles to be used like any others. In that sense, it is possible that strategic analysis occurs in the presence of the other forms of knowledge and is the primary means for testing, extending, and amending them.

References


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