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Behavioral Psychology: Springboard for Imaginative Legal Educators

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BEHAVIORAL PSYCHOLOGY: SPRINGBOARD FOR IMAGINATIVE LEGAL EDUCATORS

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Dean Kelso's theme is that (1) the civilizing of law and of society, as well as the improvement of education, are marked by increased reliance on the reinforcement of desirable behavior, and by a decline in reliance on punishment as a means of influencing behavior; and that (2) one of the most important challenges facing society and the educational world is to generate the perspectives, environments, communications systems, research, and organizations needed fully to explore and facilitate the above developments. In many ways, present day legal education operates as if teachers were already consciously applying the principles of behavioral psychology. Nevertheless, a deliberate attempt to incorporate behavioral principles should result not only in more effective classroom methodology, but more significantly in the curricular reform necessary for legal education to be relevant to its societal setting.

I. THE DEVELOPMENT OF BEHAVIORAL PSYCHOLOGY AND ITS EDUCATIONAL TECHNOLOGY

A. *Prologue on the Past*

A LAW professor, searching philosophy and psychology for insights into the learning process, can find many budless branches on those disciplines' family trees.[1] For example, Aristotle defined "knowing" as a capacity to actualize pure forms.[2] Unfortunately, this

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[1] There is little evidence that law professors have yet done much searching for inspiration in the psychological forest. Professor Cowen looked at the trees, but found no buds at all, except in psychoanalysis. "Academic psychology is almost totally irrelevant for law. This is also a sad state of affairs and a cruel disappointment to many a student of jurisprudence who had hoped that the new science of psychology would revolutionize law. It has not happened." Cowen, *Notes on the Teaching of Jurisprudence,* 15 J. LEGAL ED. 1, 21 (1962). As this article shows, the author feels that Professor Cowen overlooked some buds, blooms, and branches. A synthesis of what contemporary learning theorists have told us — along with the ways in which our present educational methods appear to be inconsistent with the synthesis — appears in Kelso, *Science and our Teaching Methods: Harmony or Discord?,* 13 J. LEGAL ED. 183 (1960). The present article sets forth what the author considers to be the most promising theory of behavior, that of Professor B. F. Skinner, and applies that theory and its associated technology to a wide range of law school and legal problems. *See* B. F. SKINNER, SCIENCE AND HUMAN BEHAVIOR (1953) and VERBAL BEHAVIOR (1957). A very readable overview of psychology's history may be found in R. WATSON, THE GREAT PSYCHOLOGISTS FROM ARISTOTLE TO FREUD (1963).

[2] R. WATSON, *supra* note 1, at 65.

does not even squint toward the classroom. Descartes' "I think, therefore I am," rings true.[3] However, educators prefer to ask, "You are, therefore why don't you think?" Freud discovered sex's ubiquity.[4] Unfortunately, he focused on couches, not curricula. Pavlov switched from sex to reflex.[5] However, most law students are easily distinguished from Pavlov's salivating dogs.

In the Twenties, psychologists probed the unconscious mind's seething labryinths.[6] Law professors, happily ignoring the id, juggled cases and blue books. Meanwhile, psychologist Sidney Pressey, at Ohio State, played with a little multiple choice machine.[7] It recorded responses to questions and immediately informed users whether they were right or wrong. The device did not look like the beginning of a billon dollar industry. Pressey went other ways. The world of legal education took little note.

Mutual disinterest might have continued indefinitely. However, the wackiest missile of World War II fused an educational explosion.

B. *Breakthrough*

It started when Professor B. F. Skinner was challenged to transform several squadrons of peace loving pigeons into expert Kamikazi fliers.[8] Three pigeons, taught to look at warships, were to be harnessed in the windowed nose cone of a missile. Their head movements would control tail fin adjustment. A majority "vote" of the winged warriors would keep the missile on target.

Skinner trained his birds by rewarding them immediately with a bit of food whenever they emitted responses approximating the behavior of looking at models or pictures of warships. "Looking" behavior grew stronger and stronger. As it did, Skinner gradually narrowed the tolerance between a rewarded good look (head aimed right at the target) and an unrewarded off-target glance. Also, the pigeons gradually had to do much more shipwatching to earn their seed.

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[3] DESCARTES' DISCOURSE ON METHOD, at IV (A. Wollaston ed. 1960), *reprinted in* R. WATSON, *supra* note 1, at 144.

[4] *See* S. FREUD, THREE ESSAYS ON SEXUALITY (1953).

[5] A thorough analysis is presented in B.F. SKINNER, *Two Types of Conditioned Reflex and a Psuedo-Type,* in CUMULATIVE RECORD 367 (1959). *See also* I. PAVLOV, CONDITIONED REFLEXES (1927).

[6] R. WATSON, *supra* note 1, at 423-95.

[7] Pressey's work is described in Skinner, *Teaching Machines,* 128 SCIENCE 969 (1958), *reprinted in* A. LUMBSDAINE & R. GLASER, TEACHING MACHINES AND PROGRAMMED LEARNING 137 (1960). Study of this article is a *must* for anyone who would venture into programming.

[8] The full study appears in B.F. SKINNER, *Pigeons in a Pelican,* in CUMULATIVE RECORD 426.01 (1959).

Ultimately, shipwatching was about all that hungry birds did. In conventional terms, the birds had learned to "like" shipwatching, or were "motivated" to watch ships. Speaking strictly in terms of observable variables, the birds increasingly engaged in watching behavior after such behavior had been reinforced.

Speaking even more precisely of the birds' history of reinforcement during their training program:

> (1) The birds initially were reinforced for "looking" behavior on a continuous schedule of reinforcement (*i.e.*, every approximately correct response was followed by food).
>
> (2) Gradually they were shifted to an intermittent schedule (*i.e.*, only some of their correct responses were reinforced).
>
> (3) The standards for acceptable behavior (*i.e.*, behavior that would be followed by reinforcement) gradually were raised.
>
> (4) The pigeons were never punished for behavior incompatible with looking behavior.

It is apparent that Skinner's birds were not actualizing pure forms. Nor were they reasoning from an "I think" proposition, or coveting warships as sex symbols. Pavlovians might be tempted to regard the strong looking behavior as a conditioned reflex. However, conditioning a reflex requires the repetitive presentation of a neutral stimulus together with one which naturally elicits the reflex response.[9] For example, Pavlov paired the ringing of a bell with the presentation of food. After many repetitions, his dogs salivated when the bell rang even though food was not present.

In contrast, Skinner's trainees were presented with a neutral stimulus (a view of a ship), were given the opportunity to respond, and were reinforced with food whenever their behavior approximated looking at the ship. Nowhere in the Skinner pattern was a stimulus used which elicited a reflex response.

The war ended before Skinner's squadron saw action. However, he used excess pigeon time and energy teaching some of his charges to walk figure eights, play ping-pong, distinguish colors, and so on. Later, Skinner turned to quite carefully controlled and quantified experiments to determine the relationships between various schedules of reinforcement and resulting patterns of behavior.[10]

Skinner's experiments produced opportunities for observing

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[9] *See* B.F. SKINNER, SCIENCE AND HUMAN BEHAVIOR 45-58 (1953). For a more technical discussion see B.F. SKINNER, *supra* note 5, at 367.

[10] These experiments are most thoroughly documented in B.F. SKINNER & C. FERSTER, SCHEDULES OF REINFORCEMENT (1957).

many systematic relationships.[11] For example, the more promptly reinforcement follows a response, the more quickly will behavior change. Reinforcement on a continuous schedule (every response reinforced) produces rapid initial learning. If behavior is never reinforced, gradually it will be extinguished — it will cease to be emitted. If reinforcement occurs only after a certain number of responses have been emitted, there is a rising curve of activity as the reinforcing event is neared, followed by a lull. The greatest resistance to extinction, that is, the highest number of unreinforced responses, occurs if reinforcement has gradually been moved from a continuous schedule to an intermittent schedule which does not follow a definite pattern. (For a human analogy, consider the behavior of a person who wins his first few bets at the races or at a one-arm bandit, and thereafter, over the years, wins from time to time.)

As previously mentioned, Skinner discovered that responses not followed by reinforcement (either on a continuous or intermittent schedule) gradually are extinguished. However, following a response with the presentation of an aversive stimulus — punishing the response — does not extinguish behavior any more rapidly than simply not following the behavior with reinforcement. Again, to present a simple example, it may be more effective to ignore a nagging child than attempting to suppress the behavior. Indeed, the child probably nags only because such behavior has been reinforced in the past. Far better it would be to reinforce those occasions when a child uses acceptable behavior to communicate a desire.

Though punishment was not observed to be effective in extinguishing behavior, Skinner found that it did have definite effects.[12] Initially it resulted in emotional responses that could interfere with future learning, because the entire situation became somewhat aversive, and it produced unpredictable patterns of avoidance behavior. Later, when the aversive emotions gradually subsided, the punished behavior re-emerged unless in the meantime stronger behavior, incompatible with the punished behavior, had been created by the discriminative use of reinforcement. For an example, consider the alcoholic who has learned to call Alcoholics Anonymous rather than search for a bottle.

Why is Skinner's work such a tremendous breakthrough? The answer is that, unlike previous psychological paradigms, each critical variable in the systematic relationships discovered by Skinner was and can be observed directly. Thus, Skinner had no need to invent

[11] These relationships are technically described in B.F. SKINNER & C. FERSTER, *supra* note 10, but they are explained in a much more readable fashion in B.F. SKINNER, *supra* note 9, at 99-106.

[12] B.F. SKINNER & C. FERSTER, *supra* note 10, at 182-93.

hypothetical entities such as pure forms, traits, mental faculties, egos or ids. Further, not only can the pertinent responses be observed, but also, and perhaps more important, the two most important controlling variables (stimulus presentation and reinforcement) can be manipulated by the experimenter.

Since Skinner's work with animals has been replicated on humans with similar results,[13] and since a teacher occupies in the school a role somewhat analogous to the experimenter in the laboratory, we now have the basis for a technology of education. Further, since we now have an analysis of behavior relevant to all actions of all men, we have the premises for synthesizing our notions about the economic man, the political man, and the law abiding or the law breaking man. Finally, and possibly most important to jurisprudes and to lawyers concerned about community problems and social reform, we have a solid basis for analyzing the human aspects of legal problems. Thus, we are in a better position for proposing solutions than were the Benthamites, who accomplished so much in the 19th century through applying a less scientific psychology (men seek pleasure and avoid pain).[14]

However, before taking off into the blue yonder of solving world problems, let us begin with the groundwork — the technology of education. The stage may be set for its investigation by providing a somewhat oversimplified list of the technology's specifications:

> (1) Provide students with many opportunities to respond actively.
>
> (2) Reward correct responses (or responses which approximate correctness) first on a continuous basis, and then intermittently, as standards for performance gradually are raised.
>
> (3) Do not punish erroneous responses; plan instead so to structure educational situations that correct behavior is observed and promptly reinforced.
>
> (4) Work toward the creation of an educational environment which provides automatic or self-reinforcement. Reinforce students for manipulating variables in problem-solving behavior so that mastery over manipulable variables becomes itself one of the rewards for problem-solving behavior.[15]

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[13] Much of the work is reported in W. SCHRAMM, THE RESEARCH ON PROGRAMMED INSTRUCTION, AN ANNOTATED BIBLIOGRAPHY (U.S. Dep't of Health, Education and Welfare Bull. No. 35, 1964).

[14] For a quick summary of the major definitions and tenets in the theory of utilitarianism see J. BENTHAM, THE THEORY OF LEGISLATION 1-43 (1950).

[15] If one reinforcer, such as praise for manipulating variables, is frequently paired with another, such as an awareness of gaining mastery over the variables, the second becomes a conditioned reinforcer by much the same process that transformed Pavlov's bell into a stimulus for salivation. *See* B.F. SKINNER, *supra* note 9, at 76-81.

C. *First Steps in the New World*

If a teacher decides to apply Dr. Skinner's prescription, how does he do it?

First, students must be provided with many opportunities for responding in some observable manner to problems and questions. Much more difficult (indeed, probably the most difficult problem in conforming educational experience to Skinnerian specifications), is to supply reinforcement on schedule. Fortunately, a very slight reinforcement at the proper time may have a great effect in changing behavior. For example, Skinner hypothesized that immediately learning whether one's response is correct can be a sufficient reinforcement to carry a person through a long series of educational challenges, at least if the learning situation is reasonably free of aversive properties.[16] (Recall the temptation to keep going on a crossword puzzle when a "down" word provides assurance than an "across" word is appropriate.)

Perhaps the best way of eliminating punishment from an educational situation is to sequence the presentation of information and questions so that most responses are correct. This provides maximum opportunity for reinforcement on a planned schedule.

To test the basic characteristics of the technology suggested by his experiments and observations (sequence stimuli, observe active responses, apply discriminative reinforcement), Skinner invented programmed instruction. His first program presented vocabulary, principles, and applications of introductory psychology in a sequence of small statements, called frames.[17] Each frame contained a problematic stimulus, to which the student composed a response. The second part of each frame contained a suggested response, concealed from the student until he had first recorded his response. Usually a student was asked to respond to new material for the first time while it was still in the frame before him. Later he was asked to apply that material when it was not in view.

Skinner's program contained frequent review. However, his review frames were not merely repetition. To strengthen new behavior, Skinner called for applications in many different contexts, much as a law professor does when he has a student compare one

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[16] B.F. SKINNER, *supra* note 9, at 59-106. W. SCHRAMM, *supra* note 13, at 10-11, reports that "[t]he majority of the studies suggest the idea that immediate knowledge of results contributed to learning. . . . Knowledge of results is doubtless more important when the probability of error is high. When the probability of error is kept low, as in a typical linear program, it becomes less important to have immediate knowledge of results." *See also* B.F. SKINNER, *supra* note 5, at 153, where he states, "[O]ne of the most striking principles to emerge from recent research is that the *net* amount of reinforcement is of little significance. A very slight reinforcement may be tremendously effective in controlling behavior if it is wisely used."

[17] J. HOLLAND & B.F. SKINNER, THE ANALYSIS OF BEHAVIOR (1961).

case with others, or discuss its relation to hypothetical cases, asking the student to act as advocate, counselor, or judge.

Hundreds of Skinnerian-type programs, from beginning reading or writing to advanced algebra, have now been written and tested. They are in use from first grade through university-level courses, and in industry.[18]

Some programs are presented through specially designed books. Others are computerized, and are presented through a console that may include a television screen, a sound system, and a typewriter keyboard.

The typical Skinnerian program is highly structured. It does not have branches contingent upon the student's performance. Acceptable response patterns are rather narrow. Perhaps because of this, law teachers have tended to assume that programmed instruction, if applicable at all in legal education, holds most promise for highly structured areas, such as legal problems covered literally by detailed codes, or the purely terminological relationships of a well developed field.[19]

Of course, if programmed instruction could be shown more effective than conventional instruction in the above two categories, it should be welcomed as a useful addition to our repertoire of methods. However, there is no reason to assume that its potential is narrowly confined. Stimuli can gradually be made more complex until students are responding to highly abstract relationships among various portions of a total situation. So too, the range of acceptable responses can be made greater as the program moves from areas in which only one response is correct to areas where a range of appropriate responses can be suggested. At such levels, a program might merely ask a student to study his response in order to determine whether or not he had considered certain issues. Some responses could be

[18] A most useful compilation is C. HENDERSHOT, PROGRAMMED LEARNING: A BIBLIOGRAPHY OF PROGRAMS AND PRESENTATION DEVICES (1964 and supplements). The most complete collection of articles on programmed instruction is A. LUMSDAINE & R. GLASER, *supra* note 7. Other useful books include W. DETERLINE, AN INTRODUCTION TO PROGRAMED INSTRUCTION (1962); E. FRY, TEACHING MACHINES AND PROGRAMMED INSTRUCTION (1963); E. GALANTER, AUTOMATIC TEACHING: THE STATE OF THE ART (1959); E. GREEN, THE LEARNING PROCESS AND PROGRAMMED INSTRUCTION (1963); R. MAGER, PREPARING OBJECTIVE FOR PROGRAMMED INSTRUCTION (1962); O. MILTON & L. WEST, P.I.: PROGRAMMED INSTRUCTION, WHAT IT IS AND HOW IT WORKS (1961); W. SMITH & J. MOORE, PROGRAMMED LEARNING: THEORY AND RESEARCH (1962).

[19] That this assumption is not necessarily true is demonstrated in C. KELSO, A PROGRAMMED INTRODUCTION INTO THE STUDY OF LAW, PART I: CASE SKILLS (1965). This was written primarily to teach an area considerably removed from that of the highly structured code: the skill of reading legal materials, particularly related judicial opinions, for and with understanding. It was hoped thereby to suggest the versatility of programmed instruction. Undoubtedly, programmed instruction could be used to teach other basic skills now taught only by costly individualized effort (if they are deliberately taught at all) such as effective composing, editing, listening, researching, and studying.

submitted to an instructor, if detailed and expert evaluation were needed for appropriate reinforcement.[20]

Successful application of the now conventional format of programmed instruction to many different subject areas and to lawyer skills would certainly be an important first step in applying behavioral psychology to legal education. However, a far more important point is to realize that the principles underlying Skinner's technology of education are not limited in their application to conventional programmed instruction. Application of these principles can improve conventional classroom instruction, as well as conventional course materials. They lead on to highly sophisticated multi-media catalysts for learning, and suggest the value of inter-institutional linkages for learning and research. They suggest jurisprudential perspectives for analyzing and improving the law. They are relevant to a miscellany of problems including law school administration, the design of law school buildings, and planning the law curriculum.

The following sections of this article will explore some of the ways in which behavioral psychology can in these areas be a springboard for imaginative legal educators.

II. EDUCATIONAL TECHNOLOGY IN LEGAL EDUCATION

A. *Applications in Conventional Courses*

As an introductory aside, it should be noted that "technology" has two meanings: (1) sets of equipment or machinery which facilitate an operation and (2) systematic application in a practical setting of basic principles validated by scientific methodology. The word is used primarily in its second sense in this section.

It is not the purpose of this article to suggest that classrooms be filled with audio-visual aids, or that computers be substituted for teachers. Of course, to the extent that systematic application of basic principles calls for interaction between men and machines, this article will not hesitate to suggest exploration. However, for the moment, put aside the spectre of computers. Assume only a teacher and his students, with perhaps the usual surroundings of books, pens, chalkboard, and chalk. Let us have a behavorial look at the case method, the problem method, the lecture, and, then, clinical courses and other recent developments.

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[20] Substantive areas have already been programmed. Professor Wills, at Miami, teaches Criminal Law by use of programmed instruction. *See* Diertke & Wills, *Investigation of the Use of Programmed Material in Legal Education*, 15 J. LEGAL ED. 444 (1963). The author has taught portions of Conflict of Laws and Trusts by programmed instruction. *See* Kelso, *Programming Shows Promise for Training Lawyers: A Report on an Experiment*, 14 J. LEGAL ED. 243 (1961).

It should come as no surprise to many authors of casebooks or to classroom experts that they have been behaving for a long time as if they had consciously been applying behavioral psychology in planning and presenting their class materials.[21] For example, with respect to the sequencing of stimuli, many teachers plan questions for class. They avoid "spoonfeeding" the answers, which would be indiscriminate use of potential reinforcement. Instead, a classroom master develops subsidiary questions which hint or suggest directions of thought that aid a student more precisely to state a point, or more effectively to reach for an idea almost grasped.

Some teachers, though they do not plan an ordered sequence of questions, come to class with a written or mental list of the most important issues or problems illustrated by the materials. The issues or problems are discussed when the teacher senses that the students are ready to deal effectively with them. Hence, the teacher provides opportunities to reinforce his students for lawyerlike behavior.

In a real sense, a class so run is a branching oral program — provided that students promptly are reinforced for acceptable responses and that the nature and sequence of questions and other dialogue has a cumulative or "spiral" effect, *i.e.*, later work builds on earlier responses and is not merely a repetition of earlier behavior with new terminology.[22]

A typical pattern in a case method class is this: the teacher begins by asking a student to make a careful statement of who is suing whom, and for what relief. After procedural matters are cleared away, students are called upon to explore the theories on which recovery was or was not, could or could not have been, granted. When the underlying basis for the decision is reached, the questions usually become more sophisticated. The students must react not only to literal words, but must also be sensitive to the method by which the judge handled prior case materials or other legally pertinent variables. A student will be reinforced by the

[21] "How does a program teach? It teaches by age-old methods of telling the student what he should know or carefully leading him through the steps of discovery." However, it also "teaches by asking the student to put his new knowledge to work immediately, to finish the sentence, do a problem, answer a question — not at the end of the chapter or the end of the unit or the end of the semester, but at the moment of acquisition. A textbook cannot do this, and a teacher can do this for only one of the students at a time, the student who is called on. It teaches by compelling each student to take each step on his own. He cannot depend on his brighter classmates, nor raise his hand when he happens to know the answer." Markle, *Inside the Teaching Machine,* in AMERICAN EDUCATION TODAY 231-32 (P. Woodring & J. Scanlon eds. 1963).

[22] During 1964 and 1965 the author visited 120 law schools as study director for the Association of American Law Schools' Study of Part-Time Legal Education and, as a part of that study, attended classes. During this time nearly 1000 law teachers were observed at work. With respect to the sequencing of problematic stimuli, it has seemed that when a teacher was most closely in rapport with his class, the discussion, like a good play or novel, approached a peak of dramatic or intellectual complexity, changed direction, then spiraled toward another central question.

teacher only if he accurately states such matters as relationships between cases, how the judge resolved the pros and cons involved in deciding a case, or how slightly different fact situations might be treated by the court. An ability to restate in one's "own words" is often used to test whether a student has really understood the matters about which he speaks, or whether he has merely hit upon a phrase in an opinion, footnote, or canned brief.

If students are well prepared, the above pattern provides many opportunities for active response, vocal or sub-vocal, and for reinforcement. However, particularly as the teacher reaches more sophisticated regions, many different sub-vocal responses may be generated, only a few of which can be vocalized and explicitly reinforced.

A slightly different classroom pattern develops when the problem method is used. The reason is that problems, when properly constructed, give the professor more control over the nature and sequencing of student behavior than do a series of cases to be read. Only a certain number of paths lead in the direction of solving a problem, whereas cases can be read in a multitude of ways. Classroom discussion of a problem assigned in advance tends to center on pros and cons relating to specific issues or strategies. Building these pros and cons calls for active responses, and may produce a greater volume of active, vocal responses than merely reading cases — even if the students have acquired habits of attempting to synthesize law from groups of cases read. Furthermore, the range of responses generated by problems may be narrower than that produced by case reading. Hence, if students prepare with any degree of diligence on problem method assignments, very likely there will be many more opportunities for reinforcing the kind of behavior that the professor hopes will be strengthened by taking his course. In building his problems, the professor can implement with some precision a prior determination of the kind of knowledge and skill he intends to develop.[23]

With respect to the reinforcement phase of educational technology, regardless of whether the case method or the problem method was being used, it has been observed that teachers who keep students most actively engaged in a dialogue usually make clear in some manner the degree to which each student's contribution approximates an ideal response that commands respect.[24] The ideal usually is not a specific statement or result the teacher hopes to hear (although many teachers do "restate" answers for purposes of recorda-

[23] An excellent report on the status of the problem method today, prepared by Prof. David F. Cavers, is THE PROBLEM METHOD, 1966: SURVEY AND APPRAISAL, 1966 PROCEEDINGS OF THE ASSOCIATION OF AMERICAN LAW SCHOOLS, PART I, at 198 (report of the Teaching Methods Committee).

[24] *See* note 22 *supra*.

tion in student notebooks), but rather an answer which embodies a satisfactory reasoning process.

In addition to presenting sequenced stimuli of spiraling complexity, and reinforcing responses with sophisticated discriminations, a third classroom characteristic that accords with principles of effective learning frequently can be observed: American law teachers today are usually quite sparing in denunciation, deliberate embarrassment, or other forms of deliberate punishment. They prefer instead either to move on to another student, or to work with a series of "prompting" questions until the erring student regains the path.[25]

Although the preceding analysis has been limited to class dialogue, some teachers bring life to a subject by lecture. Such teachers induce their audiences to respond, subvocally, to the kind of variables which move the teacher, such as retracing the steps of highly original thinking; or moving frequently from one level of thought to another — evidence to conclusions, conclusions to support, experience to reflection, what is to what should be; or comparing, evaluating, or in some other way bringing considered philosophic premises to bear on some problem. Ineffective lectures, which fail to hold the listener's attention, tend to remain at one level of abstraction, such as recounting rules of law which apply to certain logically determinable variations on a basic situation. Such a lecture does not challenge the mind with new patterns, create the tension of anticipating the solution of a problem, or build connections between the world of words and the world of perception or of ideals.

The above analysis serves as a useful reminder that law teachers and law students deal almost exclusively with verbal behavior —

[25] Lack of intentional classroom punishment may not be sufficient to avoid the emotional effects on beginning law students of a lack of immediate feedback on overall performance or the apparently never-ending question-upon-question (which creates a very intermittent schedule of reinforcement). Professor Watson has suggested that this may interfere with the development of professional predispositions, or may even erode them, and he has called for greater teacher sensitivity to student emotions.

> If a student senses cynicism or criticalness in the teacher regarding the emotions he expresses, he will swiftly learn to obscure them from visibility as well as awareness. This reinforces the very defenses we wish to obviate. It is just at the point when students freely express themselves that they hang in precarious balance. If feelings and emotions are treated as acceptable whatever they are, then and only then may they be kept in awareness long enough to test their rationality and validity. A person's current attitudes were generated from what was once a real situation. It is only when they are reapplied to a new and different set of facts that they become unreal and irrational. This is the reason why one of the goals in professional education should be to help students re-examine their feelings and attitudes in light of the impending role of lawyer. So far as education for professionalism is concerned, this is the moment of truth.

Watson, *Some Psychological Aspects of Teaching Professional Responsibility*, 16 J. LEGAL ED. 1, 17 (1963). He has delved even more deeply into the problem in *The Quest for Professional Competence: Psychological Aspects of a Legal Education*, 37 CIN. L. REV. 93 (1968). The University of Miami Learning and Instructional Resources Center has a video tape and a 16 mm. kinescope of Professor Watson illustrating some of the problems aand demonstrating some solutions.

whether the format be reading, listening, lecturing, or discussing. The problem of teaching verbal behavior relating to law is somewhat different than that of teaching verbal behavior relating to science. There, uttering a word such as "tree" or "miscroscope" can be reinforced in the presence of a particular kind of object. In law, words such as "negligence" or "domicil" have no unique perceptual counterparts. They gain meaning only gradually. The words must be heard, read, used, and reinforced in the presence of many other words and many different fact situations.[26] This must be so, since to the extent that any written or printed word is understood by the listener or reader, he must be responding, subvocally at least, to variables similar to those which influenced the speaker or writer. To read an opinion with understanding is to behave in some way as did the judge. To understand a professorial comment is to behave analogously to the professor. Hence, a lecture or discussion which deals with examples is easier to follow and ordinarily will teach more than one which is entirely intraverbal and patterned largely on the oral presentation of an encyclopedia. So, too, a lecture or discussion is more effective if it moves from one level to another (*e.g.*, by induction or deduction from facts to principles or principles to results — patterns of thought for which most law students have been reinforced during their previous formal or informal education).

Langdell's invention of the case book was successful primarily because many more active responses were strengthened when students read opinions than when they merely read summaries or heard about cases. Selective reinforcement of active responses in the classroom and in discussions with fellow students made students

[26] A thorough treatment of these matters appears in B.F. SKINNER, VERBAL BEHAVIOR (1957). The crucial distinctions in verbal behavior are not between nouns, verbs, conjunctions, and the like. The critical distinctions depend upon the reinforcing contingencies which strengthened the behavior. For example, a deprivation may have been reduced ("please pass the bread"). Or, a person may have been reinforced for making connections between words ("red, white and *blue*") ; between words and some environmental properties ("the *flower* is *red*") ; or between words emitted and the variables which strengthened their use ("all *A* is *B*, no *B* is *C*, therefore no *A* is *C*"; or I *see* a storm coming" in place of "I *read* that a storm is coming").

The same analysis can be applied to "seeing" things in one's imagination and to thinking. Thinking can be analyzed as simply a sub-vocal form of thinking out loud. If a person has a problem, in the sense that some behavior has been strengthened by a deprivation or a potential reinforcer, but that behavior cannot be emitted, the person may manipulate variables by using his hands, his speaking voice, whispers, or subvocal behavior. If he is able to emit the blocked behavior and is reinforced, *e.g.*, he is able to pick up car keys that had become buried under a pile of papers, then he has solved a problem and his problem solving behavior is strengthened.

"Seeing" things in one's imagination is a matter of behavior having been reinforced. In many situations persons are reinforced for retention of visual or auditory sensations. At first this behavior cannot be maintained in strength for very long. However, when a substantial history of reinforcement has occurred, quite vivid and detailed impressions can be called to mind.

Even general techniques for problem solving can be selectively reinforced in different contexts. Thus, it is logical to assume that persons someday will efficiently be taught not only how to learn, but also to engage in that behavior quite extensively. And, again, following Skinnerian observations, persons can be taught to teach.

more lawyerlike. It is highly probable that study of transcriptions, recordings, or video-tapes of law teachers in action would confirm the above observations as well as provide valuable aids for training future law teachers. Some work in this direction is already underway.[27]

Though communication between law teachers based upon common observations of law classes is still in its infancy, law teachers have increasingly been willing to explain what they hoped would be taught by using certain course materials, and how it might best be taught. Thus, coursebook authors are now preparing manuals that explain "how-to-teach-it" and "why." At first such publications were only for teachers. Lately, students are also being let in on the secrets. At first this was by way of an extended introduction covering what the book was about. Today, however, coursebooks are tending to include more text. The author states his views and opinions, thus placing before each student much of the synthesis that Langdell would have wanted the student himself to construct. Furthermore, the author may place in footnotes some of his favorite class questions, thus suggesting directions for preparation to the law teacher in the casebook itself. And today's footnote questions often go beyond the "suppose X fact changed to Y, what result," with a citation to a decided case. More complex problems are appearing, which clearly call for students to apply a synthesis, whether their own or one supplied by the teacher, a hornbook, or otherwise.

Thus, consciously or not, to generate more responses and to sequence stimuli so that discriminative reinforcement can be used more effectively, today's teachers are blurring the distinction between case method and problem method. However, teachers who wish to generate a larger number of student responses for selective reinforcing usually have turned in another direction: the clinical course, such as appellate moot court, trial practice, interviewing, or legal aid clinic.

B. *Applications in Clinical Courses*

Many active responses can be predicted when the contingencies of reinforcement are such that a specific problem is presented, and

[27] Professor John Murray has prepared tape recordings of teachers in action, and an observational evaluative questionnaire. He has proposed the creation of a clearing house to facilitate anonymous critiques of tape recorded classes for professors who desire the benefit of such evaluation. *See* 1966 PROCEEDINGS OF THE ASSOCIATION OF AMERICAN LAW SCHOOLS, PART I, at 261-64 (report of the Subcomm. on Evaluating Case-Method Instruction). The University of Miami has produced, under the auspices of the 1967 Teaching Methods Committee, a series of nine video tapes (which have been kinescoped) featuring eight great teachers in action. The starring teachers are Fleming James (Yale), Harry W. Jones (Columbia), Robert Keeton (Harvard), Allen McCoid (Minnesota), Soia Metschikoff (Chicago), Harry Reese (Northwestern), Myres McDougal (Yale), and Andrew S. Watson (Michigan).

reinforcement for its solution can only be obtained by action. This is what occurs when students are placed in a clinical situation.

The main teaching problem in clinical courses is to create opportunities for observing responses and for promptly reinforcing them. It is difficult to say, "Good question, Jim," while a student is still interviewing a legal aid client. However, some very imaginative experiments are going on. One of the most successful appears to be that of Professor Robert Keeton, at Harvard Law School, who has been engaged in it so long that perhaps "experiment" is no longer the proper term. A description of a part of his course in Trial Tactics should suffice to make the point.[28]

Professor Keeton provides students with a set of materials including witness statements, and asks two-man teams to represent the parties at a hearing. The problematic materials are so structured that there are valid conflicting arguments about whether a particular witness should be used at all; about the issues with respect to which his observations are relevant; and usually about whether, though he can provide favorable testimony with respect to one issue, unfavorable matters could be brought out on cross-examination.

The student teams interrogate the witness, with the instructor making rulings as would a judge. Then the entire class joins in a critique on the performance just observed. If other members of the class believe that pertinent facts could better have been produced by other questions, they are invited to try out those questions on the witness. The answers then received are placed before the house for critique.

Professor Keeton permits the discussion to range widely, but does insure that certain critical questions are asked: What did you hope to get from this witness with respect to what legal issue? Are you satisfied with what you did? How might you have done a better job? What were the most important problems involved in deciding whether to use the witness and what to ask him?

Keeton's approach to Trial Tactics generates a great deal of very pertinent student behavior, subject to immediate selective reinforcement. Little time is spent on subsidiary matters. The focus is on the crucial questions of how facts are proved, and the judgmental problems of deciding what to do when both reinforcing and aversive consequences can be foreseen in the attempt to prove (or disprove) a fact.

Sometimes clinical and non-clinical courses are distinguished in terms of skill versus knowledge, or practical versus theoretical.

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[28] The following description is based in part on conversations with Professor Keeton and on use of his Trial Tactics materials, but in greater part on the video-tape of his class at the University of Miami under the program described in note 27, *supra*.

However, usually this is done very superficially on grounds such as easily observed responses (skill) versus covert verbal behavior (knowledge), or the frequency with which practicing lawyers are observed to engage in the behavior (practical) versus frequency of the response in the repertoire of scholars (theoretical). Such distinctions interfere with the development of an effective educational technology, and the following analysis is proposed as a more workable alternative.

Education is the process of changing behavior by arranging contingencies of reinforcement for that purpose. Knowledge, whether acquired by education or by responses to the natural environment, is potential behavior. Skill is highly refined knowledge.

Knowledge is transformed into skill when contingencies of reinforcement are such that a man becomes responsive to ever more subtle or complex properties of stimuli or to more of them; when his responses become discriminative, complex, precise, or original; and when he is able to emit more efficient discriminative and manipulative responses between finding a problem and solving it.

Practical skills, when exercised successfully, have an immediate effect on the environment or on others, and are reinforced by feedback from that effect. Theoretical skills, when exercised successfully, create understanding. They are potential verbal behavior which place a man more closely into contact with subtle or complex aspects of his environment, or provide methods by which that may be done. A man need not bring about a change in the environment or in others in order to be reinforced for exercise of theoretic skill.

Improvement of practical skills to a high level of sophistication depends upon developed theoretical skills. Since law is a form of applied social science, its theoretical skills ultimately become practical, and exercise of its practical skills is likely to be more effective if the actor also has theoretical skills.

It is useful to distinguish extremes along several dimensions with respect to both practical and theoretical skills. At one extreme are skills developed by reinforcements contingent upon prompt response to a total situation in order to facilitate pre-set goals. A stereotype is the cross-examiner at work (though, of course, he must have a guiding theory of his case). At the other extreme, reinforcement may be contingent on reflective reaction to situation-types, where an attempt has been made to determine sense for the situation and the means for bringing that sense into being. A stereotype is the brooding jurisprude.

Either a clinical or a classroom setting (lecture, case, or problem method) may be designed to call for prompt or reflective responses, abstractions or concreteness, implementation or goal-defining be-

havior, or various other combinations and degrees of these kinds of responses. Certainly in the Keeton course[29] students reflect during preparation, must develop theories of their case, and decide what their goal will be with respect to the witness. When the witness is on the stand, preparatory behavior must combine with prompt, implementing, and total-situation responses. Indeed, developments may well call for some on-the-spot revision of the basic plan. In the critique portion of the class session, the contingencies of reinforcement resemble those of the case class, insofar as quick thinking is rewarded, and the problem method class, insofar as perspective on the assigned materials has been sharply limited by the specific problems facing the advocates.

Recalling the principles of educational technology,[30] the above analysis suggests that in deciding whether a course should be given clinical or non-clinical configuration, a case or problem method treatment, or some other setting, and in planning activities and materials within any of these formats, the following questions should be asked and answered:

> (1) Precisely what is the behavior to be strengthened; must responses be prompt to be effective; can they be reflective; are they to a total situation, or to highly abstract properties of it; and to what extent are goals to be formulated?
>
> (2) What is the most promising sequence of pertinent stimuli, considering the structure of the field, what the students already know, and the complexity of problems to be considered?
>
> (3) What mode of presentation will generate active responses capable of observation and discriminative reinforcement?
>
> (4) Do the problems provide an appropriate challenge — one within the ability of the students, but not so easy that reinforcement for their solution has but little effect on behavior?

Of course, there are limits to the power of purely methodological engineering. It is increasingly suspected that law students will not find it reinforcing to learn behavior which does not relate to pressing community problems of our times, and which is not in some way based upon the best available data and scientific theories with respect to that data.

Keeping the curriculum relevant as well as logical is a continuing problem. Also, so long as we rely for reinforcement on a live teacher saying "right," or simply moving on to the next question or topic as a sign that all is well, there are limits to the degree of

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[29] *See* text at note 28 *supra.*

[30] *See* note 15 *supra.*

individualized contingencies of reinforcement we can construct (since we are not likely to reach a one to one faculty-student ratio for all courses). Programmed books, previously discussed, individualize with respect to speed of progression and are so designed that individual reinforcement is frequent because most responses are correct. However, for many sophisticated kinds of skills, and for skills involving interaction to printed and oral forms of communication, instrumentation is needed, both within law schools and between law schools in order to take maximum advantage of the unique strengths of each. These matters are explored in the next sections.

C. *Educational Configurations That Include Equipment*

Some law professors have used audio-visual materials. A few have produced them. However, almost all of the available materials merely present words and pictures. They do not create a new kind of educational configuration, one calling for active responses to sequenced stimuli, followed by reinforcement for the correct responses that sequencing tends to insure.

Much attention is being paid today in educational circles to computer assisted instruction that integrates written and oral stimuli and responses.[31] The potential of such sophisticated and expensive devices will be touched upon later. However, much can be done with simpler and less expensive equipment. A multitude of potentially fruitful experiments cry out to be performed.

For example, lawyers and law students must depend upon skilled listening. Much of the data manipulated in their professional problem solving comes from lectures, questions, answers, et cetera.

Listening is not a passive, inherited faculty nor a capacity to actualize pure forms. It is a set of active responses for which law students have had a long history of reinforcement, but not a history that necessarily has developed all of the sub-skills needed to listen effectively in a professional situation. The listening lawyer or law student must sort relevant from irrelevant information, connect facts with legal theories, make interconnections between legal concepts, test "is" statements against values.

It is quite likely that many law students and lawyers underperform because they do not know how to listen effectively (just as many perform at less than full capability because of specific difficulties in reading, manipulating concepts for problem solving, composing, editing, and speaking). There is no doubt that a test could be

[31] *See* PROGRAMMED LEARNING AND COMPUTER-BASED INSTRUCTION (J. Coulson ed. 1962) and Swets & Feurzerg, *Computer-Aided Instruction,* 150 SCIENCE 572 (1965).

devised to determine how well a student listens, and that a program could be placed on tape to develop the ability to listen effectively.

While it is not the purpose here to sketch out an entire course along this vein, one of the most important skills which should be developed is to listen for the main theme of an oral presentation and, having separated it from the rest, classify other portions of the statement as supporting evidence, elaboration, and proof. Just as a legal reading course can improve understanding of written materials, so a tape recorded program, probably combining tape with a syllabus, work materials, and tests, could improve listening with understanding to legal presentations. It is assumed that such a program would not merely be aimed at understanding lectures, though it might start there, but would also include understanding a discussion and understanding an interview.

A listening program might well be taught using several different fields of law or several different kinds of legal problems. However, it might perhaps be better taught in the context of a particular first year course. There is no reason, for example, why some branch of torts could not be taught via a listening program, in order not only that the students would learn that part of the course, but also that they would respond more effectively to oral teaching in all other parts of the subject and their other courses. The program might also teach something about note-taking.

A history of positive reinforcement generated by such a program might make possible a form of learning not now in use — supplemental tape recordings available in the law library for fine points that cannot ordinarily be reached in class. Further, the library might find it advisable to stock up on tapes relating to recent developments in the law. Such tapes are now being made available commercially to practicing lawyers.

In addition to teaching listening skills, the tape recorder could well be used to teach discussion skills, as an incident to or part of learning law. Programmed problematic situations, probably related to a course then being taken, could be presented in writing (or orally from a tape) to a small group of students. They would be expected to discuss the problem until they felt the need for an operation to be performed of a kind that a discussion leader or a teacher would perform in class. Class operations include giving gentle hints, giving strong hints, suggesting a list of issues that should be considered, providing additional information on some phase of the problem, indicating whether some specific sub-answer is right or wrong, or giving an opinion on the main problem. With respect to each of the programmed problems, these discussion-leader functions

could be placed on the tape, and the recorder so structured that students could easily reach the spot on the tape which provided the desired operation with respect to each problem.

A discussion program, such as outlined above, might have the incidental effect of reviving or extending interest in the old-fashioned bull session about legal problems. Moreover, student assistance in constructing discussion tapes would provide a creative outlet for student energies that might ultimately prove almost as beneficial as writing the standard law note or comment.

Tape recorded programmed instruction, described above, has some branching built into it, since the students need not ask for each of the possible aids to discussion for each problem. However, if we are fully to individualize programmed instruction, it becomes necessary to employ complex equipment such as computers. Again, it is important to note just what the computer is adding, so that unlike the movies previously created for legal education, we are not merely spending money to present something to students in a fancier package that could just as well be done via a book.

For example, an adequate program on legal writing probably could be prepared in book form. Writing may be divided into composing and editing behavior. An experienced writer edits as he composes, trying out in his mind several versions of a sentence, and then writing the best one — keeping in mind the overall organization and theme he is trying to present. The less experienced writer has to get something out on paper and then go over it. Indeed, even the best of writers, particularly when working in a new area, occasionally needs to use a blue pencil on his first efforts.

A program to improve a law student's ability to write should begin, like the teaching of chess, with the ending game — editing. Indeed, a program has already been written on editing non-legal writing.[32] It is a fascinating experience to take the program. Such a program could rather easily be written for law students. It would include matters of editing for citation form, common misspellings found in legal writing, grammar, and diction. Also, it would call upon students to detect errors in logic, and the misuse of autoclitics (words or phrases which describe relationships between other words, or between words and external experiences of the author).

The program should probably begin with sentence problems, move to paragraphs, and then to relationships between sentences and paragraphs, particularly the use of topical sentences. This would provide a lead into composition, which might well start with a form of writing which embodies a great deal of editing behavior — the

[32] R. SHURTER & J. REID, A PROGRAM FOR EFFECTIVE WRITING (1966).

composition of headings. Headings are heavily edited writing since what has been composed must be checked, rechecked, and, typically, many times revised in order to make sure that the essence of the following text has been captured. Students could be given the substance of legal arguments from well written briefs, and then challenged to draft headings which fit the substance. Then they could compare their work with a check list of questions, re-edit their work, and, finally, compare it with examples provided by the author. Going a step beyond, students could then be given the raw materials from which an argument, case note, or memo could be composed.

Further, the law schools certainly need a program which teaches law students something about how to write a law examination.[33] Such a program could provide information and casebook references, and then begin by asking very simple questions. Sample answers would be provided. The questions would then become more complex. The order of questions need not and probably should not correspond with the order of things in the casebook. However, it might well be confined, in its early stages, to the earlier portions of a particular course, so that freshmen could work with it during the semester before final review time rolled around.

The important thing is not that all such programs be taken by all law students. The critical point is that specialized supplementary materials should be available in the law school for students who have special needs.

Although a program on writing could be presented in book form, to embody it in a computer would have several advantages. First, student responses could easily be recorded for future study. Second, the program could be amended easily. Third, as patterns of student response were learned, branches of the program could be constructed to deal with special kinds of responses and problems observed at each step of the way. Fourth, and most important, the composition and editing of legal writing could lead to the next step: challenging a student to prepare a legal writing that solves a problem for which not all of the relevant material was provided in advance. The other relevant material could be stored in the computer and made available if the student took the proper search steps.

How to do research by using a computer could be taught by a program built into the computer. This makes a great deal of sense, looking to the future, because legal research materials are increas-

[33] Just about all that most students ever see on the subject is found in the booklet by Professor S. KINYON, HOW TO STUDY LAW AND WRITE LAW EXAMINATIONS (2d ed. 1951). It is one thing to be told how to write exams and to read examples. It is quite another to edit exam answers, from simple to subtle, being reinforced along the way, and to compose answers, in a sequence from simple to complex, having had opportunities all along the way to evaluate each step of your work.

ingly becoming available in computer systems.[34] By teaching editing, composing, and research on a computer console, and then adding research technique, we would be using the machine as a combined teaching and research instrument. Probably the machine would have the capacity to permit editing of a draft by some kind of interlineation, and then it would print out, at high speed, a revised copy of what had been prepared. Thus, it is highly probable that the total time involved in researching for and preparing a written argument could be substantially decreased, and in all likelihood the thoroughness of the research would be enhanced.

Of course, substantive courses can be programmed for computer-assisted instruction. Demonstrations of programmed instruction in criminal law were included in the 1965 and 1966 audio-visual exhibits at the annual meeting of the Association of American Law Schools. Questions and information were presented on a console. Answers could be typed on a keyboard. The computer then evaluated the answer and presented the next problematic sequence.

Thus far this article has suggested that not only substantive courses, but also skills such as listening, problem-solving, and communication could be taught more effectively by conscious application of educational technology. It has been indicated that this could also occur by more conscious application of Skinnerian principles in the classroom and in the preparation of conventional materials. However, there is yet another dimension to consider in the teaching environment — learning by responding to print or voice combined with pictures presented by television and/or movies.[35]

It is clear that lawyers and law students constantly must respond in situations where what is heard or read must be placed in context. Although it is uncertain how much time should be allotted for experiences such as those described below, it seems that they would provide kinds of valuable learning experiences not now available, and that experimentation in these areas would be worthwhile.

First, lawyers are sometimes called upon to reduce to writing a general agreement reached between negotiating businessmen. A film might be produced showing two businessmen in negotiation. Students representing each side could be asked to negotiate the details and reduce them to a written contract for signature. The raw data could, of course, be presented via a summary, a transcript, or a tape recording. However, the total scene, as depicted by a movie or video-tape,

[34] C. RHYNE, THE COMPUTER AS AN AID IN LEGAL RESEARCH (National Institute of Municipal Law Officers Report No. 150, 1950) (containing an extensive bibliography).

[35] "One of the significant findings seems to be that it is possible to teach efficiently with programmed materials on television films." W. SCHRAMM, *supra* note 13, at 12.

would be a far better stimulus, and certainly a more realistic one. Listening, note-taking, and situation-reaction skills would be put to a rigorous test.

Second, students could be exposed to several versions of an interview with a client, and asked to compare them. This could be done via scripting, with the student asked to improve the script. Or it could be done live, by instructors or students. However, a more economic use could be made of teacher time by having the stimulus recorded and, as distinguished from a transcript, the film or videotape would provide the opportunity to respond not only to what was being said in the interview, but to the total picture as well.

Third, a backstage look could usefully be taken of great judges deciding a case which had been argued before them. This might provide new insights into a phase of the judicial process not heretofore brought to light.

Fourth, students could be asked to prepare on a series of cases, as for a regular class, and then attend a video or movie presentation of a class taught by a great teacher covering those materials. The presentation could direct questions to the student audience from time to time. The audience might be provided with some kind of sheet on which answers could quickly be recorded. Perhaps some answers would then be revealed on the work materials. Perhaps the answers would thereafter develop on the screen. The best configurations would have to be determined by empirical experiment. Once the proper formula was found, the expertise of great teachers could be extended far beyond the boundaries of their own schools, and in ways more educationally compelling than in their casebooks, treatises, or articles.

The law schools simply must begin experimenting with the use of television as a catalytic agent for discussion. In the past, and perhaps up to the present time, law students were for the most part print-oriented. Increasingly, however, the law schools will have a generation of students who have worked with programmed instruction and who will have learned from educational television, as well as having spent countless hours in front of television sets.

Law schools have to take their students as they come and cannot totally remold their methods of learning. And, according to Professor McLuhan, television is a medium which induces a high degree of total involvement, much as if the viewer were experiencing an extension of his tactile sense and not merely his eyes and ears.[36]

[36] M. MCLUHAN, UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN (1964), and M. MCLUHAN & Q. FIORE, THE MEDIUM IS THE MASSAGE (1967).

Students who have grown up on such fare will expect higher education much more to resemble a "happening" than a lecture.

Surely, in years to come, television will be permitted in high courts so that law students and others can experience arguments live, and thus can participate in decision day. If immediately thereafter, what they experienced could be discussed with a professorial expert, the impact of such a jurisprudential "happening" would probably be much greater than reading the case after it had been neatly packaged in a casebook. Through such a medium a sense of immediacy and urgency, as is found partly in *U. S. Law Week,* could be added to legal education. It is difficult to think of a better way than this to intensify law students' involvement in important community problems of our time — an involvement which is almost as real as the clinic, and perhaps much more beneficial because of the possibility of having a professorial expert selectively reinforce reactions to what was going on. Because television can take students into the street and into business, it should be used, or tried, as a device to promote more systematic study of the major community problems of our time.

Of course, trials, appellate arguments, and opinion day should be tape recorded as well as viewed on a monitor. Selected portions could be edited and preserved. But even for discussion purposes, there is a great value, after just having experienced the whole, in going over it, stopping the tape from time to time, and discussing a particular point or series of events.

Television and computers are expensive equipment. However, if a television program is being presented, it is cheaper to present it over a network than repeat it many times locally. The same is true of computer assisted instruction: it may be more economical to have many terminals at various schools connected to a time-sharing instrument, than to have many computers at each school. Indeed, one of the great potential benefits of instrumentation is that it can be used not only to increase the teaching effectiveness of a faculty within a single school, but also to create productive interchanges between schools.

Telelecture or radio can transmit voice communication between classes at widely separated points; telewriting and slow scan television can add a visual dimension to the experience. Consoles for computer assisted instruction can be connected by long distance telephone wire to the computer. Soon to come on the campuses of many universities are inter-university communications centers which will facilitate and coordinate activities such as those mentioned above. Cooperation between law professors at different schools can be expected to evolve into creation of courses capable of being taught

and taken at several universities simultaneously, or being used as supplementary work by students at several law schools.[37]

III. BEHAVIORAL PSYCHOLOGY, LAW, AND THE CURRICULUM

A. *The Rise of Reinforcement and the Decline of Punishment*

Law is intended to influence behavior. Thus, it embodies assumptions on how behavior is controlled, as well as judgments on what kinds of behavior should be encouraged, discouraged, or left in freedom. Law is effective because of (or perhaps should even be defined as) the contingencies of reinforcement maintained by government officials.[38]

Historically, our legal system has assumed that men seek to gain rewards and avoid punishment, and that fear of punishment is the most practicable contingency of reinforcement for the government to maintain. However, the limitations of punishment and the power of reinforcement were being discovered by lawmakers even before Professor Skinner conducted his experiments. In fact, it can be argued strongly that the civilizing of law has been marked by a shift from punishing undesirable behavior to reinforcing desired behavior.[39]

For example, creation of the Federal Trade Commission[40] was a step away from the jurisprudence of punishment. Punitive court litigation was not deemed an adequate procedure for gray areas in antitrust problems, where decisions must be based on economic or social effects rather than evil or predatory motives. The Commission was to determine cause-effect patterns. Its programs of voluntary compliance reflect its raison d'etre much more than does a cease and desist order.[41]

Reinforcement principles are more clearly evidenced by programs such as social security and medicare. Though there is a very slightly felt punishment in payroll deductions, an enormous amount

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[37] Systems for accomplishing these linkages are described in a pamphlet that emerged from the Audio-Visual Exhibit at the 1966 annual meeting of the Association of American Law Schools. The help of Mr. Michael H. Beilis, of American Telephone and Telegraph, in preparing the exhibit is gratefully acknowledged. *See* AMERICAN TELEPHONE AND TELEGRAPH COMPANY, COMMUNICATIONS TECHNIQUES FOR LEGAL EDUCATION AND RESEARCH (1967) (distributed by A.T. & T., 195 Broadway, N.Y., N.Y.).

[38] *See* B.F. SKINNER, *supra* note 9, at 339.

[39] Skinner has noted the same trend in all of society. "Not only education but Western culture as a whole is moving away from aversive practices. We cannot prepare young people for one kind of life in institutions organized on quite different principles. The discipline of the birch rod may facilitate learning, but we must remember that it also breeds followers of dictators and revolutionists." B.F. SKINNER, TEACHING MACHINES, *reprinted in* A. LUMSDAINE & R. GLASER, *supra* note 7, at 158, and B.F. SKINNER, *supra* note 5, at 177.

[40] Elman, *Antitrust Enforcement: Retrospect and Prospect,* 53 A.B.A.J. 609 (1967).

[41] *See, Voluntary Compliance: An Adjunct to the Mandatory Process,* 38 IND. L.J. 377 (1962).

of fairly predictable personal planning is based upon reinforcements anticipated or being provided for by these programs. Again, the behavior of businessmen is significantly influenced, more predictably than if criminal laws were used, by tax deductions, exemptions, or allowances.

Today, reinforcement is being proposed as a supplement or substitute for punishment even in some areas where the conduct sought to be changed is clearly undesirable. For example, anti-pollution laws are being urged which would provide tax benefits in return for money spent by polluters to install control equipment.

Such programs may make one apprehensive about the possibly undesirable side effects of "reinforcement" as distinguished from "punishment" jurisprudence. Of course, all ramifications of any law should be traced. This is particularly so when a reinforcement provision depends not upon behavior, but upon a status — as in most welfare programs. If reinforcement is contingent upon a status which can voluntarily be created or continued, then unless the program is carefully structured, it can tend to bring about or continue the status for many individuals, even though the most desirable goal is behavior that avoids the status. Thus, for example, all is not well with a welfare program which encourages fathers to remain "incognito" for fear that aid to dependent children may be cut off.[42] For similar reasons, subsidy programs must continually be monitored.

However, the problems of developing a reinforcement program so that it efficiently and effectively produces desirable behavior, and does not result in undesirable by-products, are ordinarily much less troublesome than those associated with trying to administer punishment successfully. It is no exaggeration to say that where punishment still remains in the law, there you will usually find unsatisfactory administration, failure to achieve stated goals, and even a deterioration of the process by which goals are formulated. Just a few quick examples: think of how we jail intoxicated persons as if they were criminals; think of the environmental situation into which we throw persons accused for the first time of a misdemeanor; and consider the social erosion caused by too quickly branding youths as delinquents. When punishment theory gets too far away from what the public will accept, as where the law purports to grant a divorce only as a punishment to a wrongdoer, the whole system breaks down into

[42] Some recognition of this problem was contained in the Social Security bill passed by the House of Representatives on August 17, 1967. However, the tenor of the changes was punitive — stop certain past abuses — rather than to reinforce new forms of behavior. Reported in the Miami Herald, Aug. 18, 1967, at A1, "The House approved a major increase in Social Security benefits and tough new welfare restrictions to discourage illegitimate births . . . . The child welfare provisions are intended to get jobs for unwed mothers and to stop a frequent practice of fathers leaving home so the mothers can qualify for welfare payments."

myths and devious procedures — devices which, unfortunately, are all too often available to the prosperous, but not to the poor. Indeed, almost across the board, the punishing aspects of our legal system apply much more to the poor than to prosperous persons. Persons of means are much more likely to be affected primarily by programs based on the more civilized and advanced jurisprudence of reinforcement.[43]

Rather than attempt to catalogue further instances from the past or present, let us examine several examples of how a behavioral perspective — one which emphasizes reinforcement rather than punishment — may help suggest approaches for solving pressing community problems at the local, national, and transnational levels.

Locally, the most important function of government is to insure that the physical environment adequately supports recognized values. Property tax relief for sums spent by landlords to improve substandard housing would probably produce more tangible results than an equivalent amount of money spent on housing code enforcement. Indeed, going a step further, it might be possible to create a system whereby money spent or labor invested by tenants to improve their housing conditions could be treated as a credit against rent. The possibility of ultimately securing ownership of a condominium via an option procedure, perhaps coupled with government rent sudsidies on certain conditions, should also be considered as a tool for encouraging behavior that would result in more suitable housing conditions in our cities.

The problem of pollution could be attacked not only be requiring new automobiles to have filter equipment (or electric motors), but also by selling cheaper license plates to automobiles equipped with operational filters (or electric motors). Thus, older cars as well as new could rather quickly be swept into a system for abating exhaust fumes, without resorting to the paraphernalia of punishment — tickets, summonses, court appearances, fines, and the like.

With regard to the above matters, and indeed with respect to all or almost all phases of planning for improvement of the local environment, procedures which encourage and reward greater public involvement in the early stages of developing an overall plan would pay off many dividends in greater public support for implementation of the plan. Furthermore, the plan probably would be better if such procedures were followed.

Moving now to broader geographic areas, regional problems center primarily around developing and conserving resources, and providing for their fair distribution. Action on the regional level

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[43] *See* NATIONAL CONFERENCE ON LAW AND POVERTY, CONFERENCE PROCEEDINGS (June 23-25, 1965).

would be substantially accelerated if federal support were readily available to subsidize planning conferences and the research and drafting necessary to produce interstate compacts. Permanent staffs created by groups of states in a regional area to deal with these matters would broaden thinking from "What's best for my state?" to "What's the best means for dealing with the resources of this region?" Such staffs would turn inevitably from considering such questions as how to obtain the maximum gallonage of water in an interstate river for local allocation, to questions such as whether the maximum economic benefit from the water in an interstate river can be derived from irrigation or industrial use.

Turning to the national scene, there is today much concern about demonstrations, which, depending upon their intensity, may shade into riots. The problem is both local (because people and property must be protected from physical violence) and national (because the variables that generate most demonstrations or riots appear to be nation wide in scope).

The stimulus-response-reinforcement paradigm makes it clear that if people are reinforced for demonstrative behavior, the behavior of demonstrating will be strengthened. If the existence, amount, and promptness of the reinforcement is proportionate to the intensity of the demonstrative behavior and/or the number of persons involved in the demonstration, then it becomes probable that even more intense demonstrations will occur in the future.

The next step in reasoning is not to opt for more repressive measures against demonstrations. Far from it. The burnings, violence, and disruption of a riot impose tremendous punishment on the very people the rioters apparently hope to benefit. Further, official punishment, particularly the imposition of punishment at an early stage in a situation containing a few troublemakers and many spectators, can turn the spectators into a mob because punishment, experienced or observed, creates emotional and unpredictable behavior.

The basic, long-run solution is to reinforce behavior incompatible with the onset or continuance of demonstrations or riots. Programs for reinforcing behavior that predictably lead to good jobs, sound education, and decent housing have of course been recognized as necessary ingredients in any total plan. Another promising step is to encourage the articulation of grievances at the earliest possible moment, particularly grievances against officialdom, and to provide prompt reinforcement for doing so. Hence it is that Professor Gellhorn's monumental studies on the ombudsman are so timely and have touched such a responsive chord.[44]

Second, there is a clear and present need to show certain dis-

[44] W. GELLHORN, OMBUDSMEN AND OTHERS (1966).

advantaged people that society does care, and intends to remove obstacles in their path, such as restrictive laws or practices which deny opportunities for constructive behavior. For example, whether by statute or otherwise, the avenues for entry into many of the trade unions should be broadened. Until it becomes possible to practice a trade, no reinforcer is available to encourage educational effort to improve one's skill.

Third, local officials should not become so preoccupied with improved training for riot control that they fail to search for schemes that would reinforce the behavior they would like to see occur. For example, if the city fathers of Fort Lauderdale, Florida, would prefer that its annual influx of students dance rather than riot, then the city should provide plenty of music and dancing space, rather than a dark beach and an array of police alerted for riot control.

Fourth, promises should not be made in order to reinforce the behavior of ceasing to demonstrate.[45] However, promises made should be honored. Failure to carry through with a promise is a form of punishment and will produce all of the usual undesirable results.

Fifth, if a riot does break out, punishment should be held to a minimum. The "white hat" concept, used in Tampa, Florida, appears to have been quite effective. A "clear the area" curfew appears to be more effective than attempting many arrests in the midst of spectators who see in the arrests many examples of punishment.

It is recognized that the above is only a superficial start toward suggesting some means for dealing with a current national problem. The problem is too complex for solution by any such five points. However, the hope is to suggest the kind of perspective and approach that follows from applying behavioral psychology. Further examples relating to cooperation in the administration of justice, juvenile courts, and the good samaritan appear in the footnotes.[46]

Moving to the transnational arena, it seems clear that if a gov-

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[45] Of course, efforts not to reward rioters should not lead to a punitive attitude. Whitney M. Young, Jr., executive director of the National Urban League, is rightly concerned that "Congress, 'in its obvious efforts to avoid rewarding the rioters,' will embark on 'a course of retaliation, revenge and vindictive activity' that will ultimately punish innocent Negroes as well and thereby play right into the hands of the extremists." TIME, Aug. 11, 1967, at 12.

[46] If a citizen cooperates with law enforcers as, for example, by taking a day off from work, presenting himself at the courthouse, perhaps waiting on uncomfortable benches for a time, but then learns that the trial has been postponed, the lack of reinforcement will tend to extinguish the behavior of willing cooperation. Some devices to insure against this situation should be tested. For example, postponement might be permitted only on motions timely made, with proof that witnesses have been notified or assurances that they will be notified. The situation might also improve by more efficient procedures for scheduling hearings (a few courts are using computers), and compensation for witnesses who have to appear more than once because of postponements. The contingencies of reinforcement that now face would-be rescuers are no better than those awaiting persons who are willing to cooperate in law administration. The potential good samaritan can do nothing and suffer no legal risk. He may help, without hope

ernment is reinforced for the behavior of asking for an economic or military grant, and such grants are forthcoming for the asking, then the behavior of asking will be strengthened. What initially is viewed as a "privilege" will tend to become viewed as a "right." When such a history of reinforcement is built up, denial of further aid becomes a form of punishment and, hence, likely to be followed by emotional behavior. For an example, consider the temporal relationship of the United States' withdrawal from the Aswan Dam project and the seizure of the Suez Canal.

This is not to suggest that foreign aid programs be discontinued. They have done much good. However, they should be planned within a behavioral perspective. For example, usually it is hoped or expected that the granting of aid will be followed by certain changes in the behavior of the grantee government, as in the Alliance for Progress program. Typically, it is expected that the foreign government will take some direct action. However, if ultimately the behavior which must change is that of individuals or organizations within the aided country, it may be much more efficient to encourage that behavior by having it reinforced directly by the local government through such devices as tax reductions, subsidies, and the like. Local government could then be reimbursed for its costs or loss of revenues. Also, aid programs might more often be designed as joint projects with religious and business leaders, and other leaders of public opinion, as well as with government officials. Understanding of the problems would be deeper, and responsibility for implementing the programs would be more broadly shared.[47] For example, it seems likely that some such approach will have to be used in order to obtain

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of reward, but with the risk of being sued if his rescue efforts are not entirely satisfactory. If he is injured in the attempt, he has but slight chance of recovering his damages. Obviously, if the law wants to encourage people to help others in danger, or at least not to discourage such behavior, then the contingencies of reinforcement in the law should provide some immunity for negligence, and there should be funds to provide compensation for injuries caused by heroism. I do not favor punishment of individuals for failing to provide aid. However, some institutions could be subjected to aid-providing duties, which could be passed on by reinforcing personnel policies.

Juvenile courts are mentioned since, until recently, they were thought to be great advances in law administration. However, it is now appreciated that, informal or not, a determination of delinquency is a severe punishment. And, of course, legal counsel must now be provided for such proceedings. For the future, attention must focus on pre-hearing procedures, where constructive relationships might be generated without filed charges, detention, and the like. See remarks by Professor Monrad Paulsen in NATIONAL CONFERENCE ON LAW AND POVERTY, CONFERENCE PROCEEDINGS 77 (June 23-25, 1965).

[47] The Japanese have been using this approach in foreign aid programs, apparently with great success. For example, it has been recounted that a Japanese firm, backed by government funds, lent a Korean company considerable funds to build a chemical fertilizer plant and helped supply construction workers and supervisors. Japanese schools taught several hundred Koreans chemical engineering, and Japanese chemical companies gave them three to six months on-the-job training. The net result was increased agricultural production in Korea, whose food could be sold in Japan in return for the sale to Koreans of manufactured goods. Velie, *Japan's Quiet War Against Mao,* READER'S DIGEST, Aug. 1967, at 116.

the maximum advantage from the enormous potential supply of food and minerals that is in the oceans.

A useful analogy from this country is the procedure used in drafting the Uniform Commercial Code. Its phenomenal legislative success is undoubtedly related to the methods used in its planning and drafting. Business practices were carefully studied. Businessmen were consulted so that the Code would help commerce flow smoothly under the umbrella of fair dealing. Hundreds of lawyers participated in workshops designed to test the emerging draft from every point of view. By the time the Code was published in final draft, many people had a history of positive reinforcement for working on it. Many people wanted to see it enacted. And many people could testify to the changes it would make and why it would work.

Since the curricula of law schools tend to mirror law, it seems clear that as behavioral principles increasingly influence the law, so will we see more concern with their application in designing courses.

B. *Curricular Effects*

Of course, a law school's curriculum continually changes without external or committee-inspired planning because of what its professors do (regardless of course labels). Further, faculty calibre is more important that bulletin logic.[48] Also, to agree with Professor Gellhorn, the most important single factor for the success of any curriculum probably is the faculty's enthusiasm for what is taught[49] (a factor which makes reinforcement from such men more significant).

However, the above observations do not transform all "outside" curricular suggestions into officious intermeddling. Enthusiastic professors may at least occasionally respond to suggestions. Hence, the text for this day and this decade. Law teachers should examine the conceptual structures and administrative practices relative to their fields of law or to social problems which will form emerging fields of law, and ask whether existing contingencies of reinforcement are the most likely ones to shape the behavior called for by prevailing or preferred values. If this were done, the result would be many promising new concepts, new organization of ideas, and new legal processes.

Examples already have been provided of how a jurisprudence incorporating behavioral principles has made inroads in our law and, thus, without much professorial initiative, must ultimately be worked

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[48] For an elaboration of this theme, as well as some of its limitations, see Kelso, *Curricular Reform for Law School Needs of the Future,* 21 U. MIAMI L. REV. 526 (1967).

[49] Gellhorn, *Commentary,* 21 U. MIAMI L. REV. 536 (1967). "If the curriculum as such is not the most important concern of legal educators, what really should be important to us? I think it important that law professors be *excited.* They ought to be terribly concerned about what they are doing . . . . Then each teacher should communicate his concern and his enthusiasm through the work that he is doing with students." *Id.* at 539.

into the curriculum. However, it should be illustrated how a law professor, viewing a field of law from a behavioral perspective, might come up with a new emphasis and new approaches, even before that area of law had fully embodied reinforcement principles. Take a course in torts as an example.

If asked to prepare a set of materials on torts, one might well begin by deciding that it apparently is true that neither the threat of a punishing judgment nor the possible reinforcement of a tort recovery influences drivers (other than causing potential defendants to buy insurance). One might well conclude that at least the automobile branch of tort law is a compensation system. Thus viewed, it is part of the nation's overall health and welfare system — a system designed to protect people from punishments or from the lack of reinforcers that ordinarily are enjoyed by others. Perhaps the field, as so viewed, deserves a new name, such as Injury Prevention and Loss Allocation.

Regardless of whether a new name be chosen, the perspective limits concern with states of mind, and shifts attention to the structuring of risk distribution processes and to proposals for reducing accidents and the severity of injuries they produce. With respect to risk distribution processes, it seems clear that they should provide prompt compensation for actual injuries, without generating excessive litigation, and should include some assurance that recoveries will be similar when accidents, injuries, and losses are similar — an assurance not present in the system now operating. The requirements all point to the emergence of some kind of compulsory insurance plan.[50]

The problem of getting safer roads, cars, and drivers elicits several possible answers. Drivers who have not had accidents or traffic violations for a certain number of miles could be permitted to purchase licenses for less than is charged to others. They could be given a safe driver sticker of some sort. Their insurance rates could be substantially lowered.

To promote safer roads, the federal government should contribute bonus support to states which can demonstrate successful efforts to build safer roads, or to operate roads with better safety records.[51] Governmental agencies should be encouraged to experi-

[50] The Keeton plan for self insurance would reinforce injured persons by prompt payment of damages and eliminate the punishing aspects of litigation. Keeton & O'Connell, *Basic Protection: A Rebuttal to Its Critics,* 53 A.B.A.J. 633 (1967).

[51] Only belatedly has the federal government recognized the consequences of not offering reinforcement for safe design in road building. Representative John A. Blatnick (D. Minn.), chairman of a House subcommittee investigating highway design defects, has reported that thousands of miles of interstate highways are lined with faulty guardrails, poorly constructed median barriers, badly placed signs, light poles, and other obstacles. Indications are that as many as 20,000 deaths may have been caused by such hazards. Miami Herald, Aug. 17, 1967, at 26A. The federal government has indicated its willingness to pay for 90% of the cost of corrective programs, as it did for construction. The initial use of a reinforcing bonus for safe design would have been a lot cheaper in money and lives.

ment in the design of safety devices. Perhaps intersection signals could be constructed which warn whether or not a car is in the crossing path within, say, 300 feet. These could warn the drivers on the "stop" street by turning on a red light, and warn the preferential street driver by turning on a caution light. With respect to the building of safer cars, the federal government is in the process of taking some worthwhile steps. The government might also consider the preparation of a "safe car" list, noting with statistics what kinds of injuries were suffered in comparable accidents in various kinds of cars.

Many other experiments could be considered or tried in each of the areas noted above. This writer does not propose to create a comprehensive list because the only purpose here is to point out that once the new perspective is used, the interests and responsibilities of law professors and their students broaden out to include something other than rules for litigation.[52]

To conclude the sojourn into torts by moving beyond automobile accidents to other injuries, the application of behavioral psychology would result in the asking of new kinds of questions about various causes of action. For example, rather than wonder what conduct should be actionable if it caused certain kinds of injuries, the question should be, "What behavior and institutions do we want to encourage by reinforcement so that injuries will be avoided, and, if they occur, will promptly and fairly be compensated?" Thinking of this type has already led to the extension of absolute liability into many areas where the social cost of injuries can be spread through insurance.

Leaving torts, and returning to the curriculum as a whole, it has already been observed that law is shifting from punishment to reinforcement as its most relied upon instrument of social control.[53] If that long range trend continues, it becomes ever more imperative for legal educators to consider whether the education they provide is preparing men only for legal processes in which the issue is whether punishment shall be imposed, or whether law graduates will also be able to play a significant role in developing and administering reinforcement programs designed to harmonize social and legal processes. If lawyers are to be more than the mechanics for a system gradually being replaced, if they are to be the architects for systems gradually

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[52] For example, in my opinion if a behavioral approach were taken in the development of professional responsibility programs, we could engineer changes in values and attitudes as well as in knowledge, a result apparently not now being accomplished. COUNCIL ON EDUCATION IN PROFESSIONAL RESPONSIBILITY, THE ASHEVILLE CONFERENCE OF LAW SCHOOL DEANS ON EDUCATION FOR PROFESSIONAL RESPONSIBILITY, PROCEEDINGS 131 (1965).

[53] *See* note 39 *supra.*

coming into being, the law school curriculum must be revisited.[54]

Professor Gellhorn has suggested that we as teachers may have less influence over our students than we might hope or think we have.[55] But it is the suggestion of the author that research and course design as described above would help create the enthusiasm which Professor Gellhorn believes to be the most essential ingredient in good teaching.

CONCLUSION

This article can be summarized rather concisely. The main tenet of the educational technology supported by behavioral psychology is as follows:

To maximize behavioral change, present stimuli in an environment such that many active responses are made which can be observed; reinforce those which approximate desirable behavior, gradually decreasing the tolerance (or, to put it another way, gradually increasing the standards for performance), as reinforcement is shifted from a continuous to an intermittent schedule; but do not punish erroneous responses, because this makes the whole situation aversive, thus producing undesirable emotions and unpredictable avoidance behavior.

This formula suggests many reforms and experiments in legal education's methods, curricula, programs, administrative structures, and procedures. Likewise, it suggests avenues for research in improving the law and its administration. It could well support an as yet unformulated new jurisprudence, one which combines practical and theoretical in ways more immediately apparent to beginning law students, and more useful to society.[56] For when law is viewed essentially as a contingency of reinforcement for behavior, we are led beyond legal words to the actual behavior of people in framing, administering, and reacting to law and law men.

Thirty-five years ago, Karl Llewellyn urged that we should study the contact point between law people and law-affected people.[57]

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[54] In addition to more specialized courses, this may well include provisions for courses or even non-degree programs (or, at least, non-LL.B. or J.D. programs) designed to help insure that satisfactory legal services are readily available at a reasonable price to all persons who can benefit from them. *See* Q. JOHNSTONE & D. HOPSON, JR., LAWYERS AND THEIR WORK (1967).

[55] GELLHORN, *supra* note 49, at 538.

[56] A jurisprudence concerned with implementing the reinforcement principle rather than devising punishments must be empirically oriented toward behavior — the kind of behavior that many lawyers encounter day-to-day. This has been described elsewhere as a "lawyer-oriented" jurisprudence, and it has been noted how it calls for the creation of permanent empirically oriented research centers at our law schools. Kelso, *Steps Toward a Lawyer Oriented Jurisprudence: Problems, Promises, Procedures, and Pitfalls*, 19 U. FLA. L. REV. 552 (1967).

[57] Llewellyn, *A Realistic Jurisprudence — The Next Step*, 30 COLUM. L. REV. 431 (1930), *reprinted in* JURISPRUDENCE: REALISM IN THEORY AND PRACTICE (1962).

I quite agree. Now, however, there is a scientific framework within which better to understand what it is we are observing; there is a guide for the kinds of things to observe and a map to help us understand what it is we have seen.