Book Reviews

Law and Psychology

Psychology in the Legal Process. Papers from a meeting, Sept. 1975. BRUCE DENNIS SALES, Ed. Spectrum, New York, 1977 (distributor, Halsted [Wiley], New York). xii, 292 pp. $20.

The Criminal Justice System. Papers from a conference, Lincoln, Neb., Oct. 1975. BRUCE DENNIS SALES, Ed. Plenum, New York, 1977. xii, 258 pp. $19.50. Perspectives in Law and Psychology, vol. 1.

We are witnessing a boom of interest in the relation between psychology and the law. It takes several forms: joint degree programs in a number of universities, fellowships for established psychologists to spend a year at a law school, employment opportunities for psychologists in government agencies and not-for-profit research organizations dedicated to studying and serving the justice system, the publication of psychologically sophisticated research in law reviews and a new specialized journal, symposia at national conventions, and books—in the last three years there have been at least six authored or edited by psychologists dealing with the application of psychological understanding to legal processes and the application of legal analysis to psychological research and therapy. The 24 chapters of the two books under review provide a decent sample of the scope, depth, and quality of the work generated by this booming interest.

Psychology in the Legal Process, which began life as papers on the program of the 1975 meeting of the American Psychology-Law Society, includes treatments of the legal topics psychologists have traditionally found most fascinating: juries and trial processes (the effects of videotaped testimony on mock jurors' judgments; consequences of jury size and decision rule on mock trial outcomes; dynamics of persuasion during the voir dire examination), the definition and prediction of "dangerousness," children's development of legal notions, and the problems of the psychologist as expert witness.

Several chapters in the book are also explicitly aimed at the formulation or analysis of policy regarding psychologically interesting issues like the regulation of "psychological devices" (aversive conditioning or biofeedback equipment, for example) and the appropriate place for psychologists in child custody proceedings. There is also an attempt to apply specific psychological theory (equity theory) to the rat's nest of problems involved in the imposition of criminal sentences. Given the breadth of topics covered, it is not surprising to find, nor is it a criticism to note, that *Psychology in the Legal Process* is a sampler of psychologists' interests in legal processes rather than a systematic exposition or integration of them.

As its title indicates, the focus of *The Criminal Justice System*, which was born out of papers read at the first Law-Psychology Research Conference at the University of Nebraska, is sharper. Eight of its nine chapters address topics specific to criminal justice or the relationship between criminal and mental health sanctions. The ninth chapter, a thorough, well-documented review of the psycholinguistics of jury instructions, seems out of place in the context of the other chapters.

The quality of the research and scholarship invested in the chapters of *The Criminal Justice System* is generally high. Of particular value for readers new to the criminal justice field will be the brief chapter by Norval Morris, "Who should go to prison," which lucidly expounds the theory of incarceration that, it seems safe to say, will be regnant in the corrections establishment for some time to come. What is missing in the book, as it is missing everywhere else in print, is a thorough exposition of a general psychology or a theory of human nature that might justify the incarceration policies Morris propounds or, for that matter, any other general incarceration policies. (The chapters in both volumes under review on current problems with the identification and treatment of "dangerous" offenders make it evident that clinical psychology and psychiatry have not to date supplied a workable theory of criminal behavior.) As Hans Toch says in his chapter in *The Criminal Justice System*, "We all know—or we all presume to know—that prison is hell" (p. 161). What we don't know, and should not presume will be easy to determine, is just what kind of hell, and for how long, offenders should suffer.

Toch's chapter emphasizes the difficult realities of prisoner classification schemes. These realities, rather than the philosophical and political puzzles surrounding changing trends in acceptable rationales for incarceration, present psychologists with extraordinarily important research tasks and opportunities for useful work.

At the level of general theory, psychology and law are in a relationship of ambiguous apposition. Sometimes, because we don't know what else to do, we simply hyphenate the fields, as in the American Psychology-Law Society. And it may happen with this hyphenated area of intellectual interest, as is happening with the hyphenated Americans dear to sociological literature and the hyphenated surnames recently inspired by desire for sexual equality, that it will live uncomfortably for a while before finding a place in the establishment. What we need, at least, are theories to take us from the apposition of psychology *and* law to a useful psychology *of* law. (We thank Wallace Loh of the University of Washington for this expression.) Such theories should be grounded in the realities of the settings to which they are applicable. Conceptual roadblocks composed of obsolete distinctions between "pure" and "applied" psychology should be rapidly dismantled in this effort and all attention focused on providing conceptually clear models, hypotheses, and programs of empirical research. The work contained in many of the chapters of these two books appears to us to be aimed in the right direction.

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Transient Events in Space

Study of Travelling Interplanetary Phenomena 1977. Proceedings of a symposium, Tel Aviv, Israel, June 1977. M. A. SHEA, D. F. SMART, and S. T. WU, Eds. Reidel, Boston, 1977. xii, 444 pp., illus. $38. Astrophysics and Space Library, vol. 71.

The phrase "traveling interplanetary phenomena" conjures up different notions in different people. The solar wind physicist immediately thinks of the more or less steady plasma outflow from the sun, upon which shocks, Alfvén waves, or rotational discontinuities (to name a few) may be superposed. The cosmic ray physicist, on the other hand, tends to regard the interplanetary medium as a static, or at best a slowly convecting, medi-

um; to him or her the "traveling phenomena" are tiny energetic particles, and he or she is concerned with such things as rigidity spectra, particle acceleration mechanisms, and anisotropy measurements. Still others are more interested in the signatures left by these traveling phenomena on astronomical objects (planetary magnetospheres, comets) that happen to be in the sun's vicinity. Perhaps farther afield, one could regard the planets and asteroids, and solar radiation itself, as other forms of traveling interplanetary phenomena, whereupon it seems that the list could go on without end.

This book deals with the more substantive of the above types of traveling phenomena. It contains the invited papers that were presented at a symposium held in memory of L. D. de Feiter. A forthcoming report (*Contributed Papers to the Study of Travelling Interplanetary Phenomena/1977*) will complement the present volume.

The 20 self-contained papers in the volume under review span a broad range of topics, from the solar origins of, and attempts to model dynamically, interplanetary disturbances (papers by E. Hildner, R. P. Lin, and S. T. Wu *et al.*) to the current status of solar wind theory and observations (papers by W. I. Axford, S. Cuperman, D. S. Intriligator, E. J. Smith and J. H. Wolfe, and F. L. Scarf) and attempts to unravel the information contained in cosmic ray observations (papers by G. Wibberenz, E. C. Roelof and S. M. Krimigis, and T. P. Armstrong). The volume concludes with an intriguing discussion by H. Porsche of experimental opportunities, past and forthcoming, afforded by the Helios missions.

For the most part, the authors are distinguished and active workers in their respective fields, which may account for the tendency I noticed for them to stress their own work. In this context, the most objective paper is that by Axford on the three-dimensional structure of the interplanetary medium. I sensed that, had the symposium been more widely attended, the conclusions reached by certain of the other authors would have been critically questioned during the discussion session (which has purportedly been faithfully transcribed in this volume).

One aspect of the book that I found puzzling is that virtually no mention is made of the extensive investigations that have been carried out on responses in the planetary magnetospheres and ionospheres to interplanetary disturbances. Is not, for example, the modulation of decametric radio emission from the Jovian magnetosphere as reliable an indication of activity in the interplanetary medium as is the response of comet tails (to which three lengthy reviews are devoted)? And what about interplanetary effects on our own magnetosphere? Apparently the organizers of the symposium felt that these topics had already been adequately covered in the recent literature or would be the subjects of future symposia.

One can only be grateful that the editors chose to eliminate unnecessary delays in making this handsomely bound volume available. Nevertheless, certain benefits have been sacrificed in the process. A well-written summary, tying together the diverse topics covered in the book and establishing a consensus concerning both the overall state of the art and future goals, would have conveyed the true flavor of the symposium much more effectively than the present volume does. A subject index would have been useful, too; I can't imagine that the inclusion of one would have led to a significant publication delay.

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Researchers on Radioactivity

The Self-Splitting Atom. The History of the Rutherford-Soddy Collaboration. THADDEUS J. TRENN. Taylor and Francis, London, 1977. xii, 176 pp., illus. £6.

On 27 March 1901, Rutherford and Soddy debated the electron theory of matter before the McGill Physical Society. Neither lacked confidence. Soddy, aged 23 and fresh from Oxford, had sailed to Canada certain that he would be elected to a vacant chair of chemistry at the University of Toronto. He had had to settle for a demonstratorship at McGill. Rutherford, aged 29 and trained at Cambridge, the fount of the electron theory, had by his own admission discovered "1000 things undreamt of" about atoms during the three years he had been in Montreal. He looked forward to the match with Soddy. "Chemist" and "damn fool" were synonyms to him.

As Trenn describes it on the basis of Soddy's unpublished notes, the debate centered on whether evidence about the electron—about "bodies smaller than atoms"—required a change in the basic concepts of chemists. Not at all, said Soddy, who refused to allow electrons materiality: "I feel sure chemists will retain a belief and a reverence for atoms as concrete and permanent identities, if not immutable, certainly not yet transmuted." Rutherford countered with the evidence that electrons are bodies and that atoms constantly lose material parts via ionization.

Six months after the debate Rutherford asked Soddy to help him to discover the chemical nature of thorium emanation. According to Trenn, the investigation turned Soddy around: emanation appeared to be an inert gas arising spontaneously from a heavy metal, a product of natural alchemy. But it was also possible that the emanation was an impurity in the thorium, or a product or a constituent of an impurity. This last interpretation recommended itself when Soddy succeeded in separating from "thorium" something he called thorium X (^{224}Ra), which appeared to carry all the activity of the parent substance. Rutherford and Soddy soon discovered in the behavior of ThX a most powerful argument for transmutation. In a few days ThX lost all activity while the residual "thorium" regained its former power. The rise and decline went on at the same rate. It appeared that in natural thorium ThX was produced as rapidly as it decayed.

It took about a year for Rutherford and Soddy to move from this realization, which came a few months after their collaboration began, to the definitive disintegration theory. At first they distinguished the processes of radiation and transformation: the particles of ThX, for example, were supposed first to arise from thorium by "subatomic chemical change" and then to emit their characteristic radiation. The reasoning by which they came to associate the expulsion of an α or β particle with the chemical transformation is too intricate to be rehearsed here. It exploited, among other things, Rutherford's demonstration late in 1902 that the α ray, then usually assumed to be a species of x-ray, is a particle.

Trenn follows his team with skill and fortitude. He has used all the known extant documents, including laboratory notebooks and correspondence. He has succeeded in thinking himself into the problems as they may have presented themselves to Rutherford and Soddy. That required both an effort of will and a grasp of many points thought important during the work but now regarded as either error or insignificant detail.

Nonetheless Trenn omits some matters that might fairly be considered to belong in a close account of an extended collaborative experimental research. One misses a description of the day-to-