

evidence on the matter. This example illustrates some of the difficulties in treating expert psychological evidence with quite the same degree of confidence that other forensic scientific advice has earned. But it is clear from the books of Loftus and Yarmey that forensic psychology is a field that has already made some worthwhile contributions and could easily provide much more information to help reduce the number of miscarriages of justice.

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Limitations of Judgment

Human Inference. Strategies and Shortcomings of Social Judgment. RICHARD NISBETT and LEE ROSS. Prentice-Hall, Englewood Cliffs, N.J., 1980. xvi, 334 pp. \$14.95. Century Psychology Series.

The irrational, "hot" image of humans embraced by Freud and his followers has for the most part been superseded in psychology by a more rational, "cool" image. The present book takes issue with both the current flattering conception of human rationality and the earlier Freudian view. It is Nisbett and Ross's position that humans are characterized by considerable irrationality, but irrationality that stems from cognitive limitations rather than unconscious drives or conflicts.

The focus of this fascinating book is human inference, and the authors begin with the premise that the lay person, like the formal scientist, is continually involved in attempts to understand, predict, and control events. From this premise, the authors proceed to measure the "intuitive scientist" against the standard of the formal scientist. The conclusion reached by Nisbett and Ross is that the intuitive scientist, despite numerous formidable strengths, displays various shortcomings.

Nisbett and Ross describe these shortcomings as taking one of two general forms. First, the intuitive scientist in his or her everyday life fails to follow certain logical and formal statistical principles in performing the tasks of data description, covariation detection, causal inference, and prediction. For instance, the intuitive scientist often makes erroneous generalizations about populations or objects because he or she is ignorant of the problems associated with small or biased samples. Other shortcomings of this type

that lead to errors in inference include tendencies to nonregressive prediction and inability to discern covariation.

The intuitive scientist also relies too heavily on certain intuitive inferential "tools" or strategies. These strategies, although generally valid, are often applied where formal principles of inference would be more appropriate. Some of the most important strategies employed by the intuitive scientist are judgmental heuristics that serve to reduce complex inferential tasks to simple judgmental operations. One such heuristic, first identified by Kahneman and Tversky, is the "availability" heuristic, which is used when judging frequency, probability, and causality. The application of this heuristic results in events' or objects' being judged as frequent, probable, or causally efficacious to the extent that they are readily "available" in memory. This heuristic is generally valid, but, because many factors unrelated to frequency, probability, or causal potency can affect the availability of objects and events in memory, its application will occasionally lead to errors.

A second heuristic, labeled the "representativeness" heuristic by Kahneman and Tversky, is used by individuals when they are faced with the task of determining the category to which an object or event belongs. Through the application of the representativeness heuristic an object is assigned to one conceptual category rather than another according to the extent to which its principal features represent or resemble one category more than the other. The representativeness heuristic is inappropriate, of course, if the known features of an object are ambiguous guides to its categorization. In such an instance the relative frequency of the categories in the population under consideration becomes the normatively appropriate guide to categorization. Unfortunately, the intuitive scientist tends to apply the representativeness heuristic even in these inappropriate contexts.

In addition to overutilizing judgmental heuristics, the intuitive scientist is also described as being unduly influenced by preexisting "knowledge structures," such as beliefs, theories, propositions, and schemas. These structures, like judgmental heuristics, are necessary to reduce the informational complexity of life but occasionally can lead to inferential errors. Knowledge structures mislead the intuitive scientist to the extent that they are poor representations of reality or preclude attention to the details of the data at hand.

The authors build their case con-

cerning the intuitive scientist with care and conviction. Their style is lucid and accessible. Many of the data they present come from the research on attribution and social inference processes that they and their colleagues have conducted over the last decade. This work already has had considerable impact on the field of social psychology, and the expanded discussion of it here is most welcome. Nisbett and Ross also discuss extensively the influential research of Kahneman and Tversky on judgmental heuristics as well as a great deal of other research that focuses on the limitations of human judgment. The authors also relate stories about the failings of the intuitive scientist in everyday life. These anecdotes not only leave the reader with the feeling that "there but for the grace of anonymity go I," they convey the great range of situations in which the lay person is actually in the role of an intuitive scientist.

Despite the aggressiveness with which Nisbett and Ross make their case concerning the shortcomings of the intuitive scientist, they are careful not to impugn his or her general competence. Their sympathy for the intuitive scientist is nowhere more in evidence than in the chapter they entitle "Assessing the damage." Here they not only remind the reader that the intuitive scientist has many exemplary qualities, they also demur from harshly condemning his or her shortcomings. In fact, the conciliatory mood of the chapter strikes one of the few discordant notes in the book. In their attempt to avoid outright condemnation, they appear unnecessarily charitable.

Anyone interested in the human mind should read this book. Nisbett and Ross have given coherence and substance to the study of human inference and in so doing have made a significant contribution to our understanding of the strengths and limitations of human intelligence. Social and cognitive psychologists will be particularly interested in the book, since Nisbett and Ross have succeeded in forging an interface between these two fields that will be the impetus of much future exploration and debate. I suspect the book will also intensify interest in bridging the long-lamented gap between social cognition and behavior.

Like all major books, this book will generate controversy. Arguments will be made that Nisbett and Ross unjustly accuse the intuitive scientist of normative errors. Some social psychologists undoubtedly will also challenge the authors' claim that most errors of human inference reflect "cool," cognitive ori-

gins rather than “hot,” motivational ones. The question of how serious the errors are that the authors identify will provoke debate as well. Whatever the outcomes of these controversies, the field will surely bear the mark of this important work for years to come.

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The Fortunes of a Psychologist

Human Science and Social Order. Hugo Münsterberg and the Origins of Applied Psychology. MATTHEW HALE, JR. Temple University Press, Philadelphia, 1980. xii, 240 pp. \$17.50.

Early in the 1890's Harvard University, following the lead of William James, sought an individual to develop the new science of experimental psychology at Harvard—an individual who would be the leader of the field and “a man of genius.” The search was successful in the sense that the university, with James's considerable effort, won its first choice—Hugo Münsterberg of Freiburg, Germany. When Münsterberg accepted, James wrote, “I believe that this has been the best stroke I ever did for our University.”

Münsterberg arrived in 1892 an instant luminary; he was made chairman of Harvard's philosophy division, which encompassed psychology, and soon he was elected president of the American Psychological Association. And more: he was received on a grand scale by American society, in which he traveled widely and at the highest levels. He was befriended by American presidents, industrialists, and starlets in the silent movie industry. Scarcely a year passed during his 25-year Harvard career in which his name did not appear in some sensationalistic article in the American press. On top of all that, Münsterberg was and may still be the most prolific writer in the history of American psychology; he had the capacity to dictate lengthy textbooks in the span of a month.

But today at Harvard there is no Münsterberg fellowship or professorship, no Münsterberg Hall, not even a Münsterberg Lounge. Once when visiting with graduate students in Harvard's William James Hall I saw no sign of awareness on their part of Münsterberg's identity. That situation is all the more ironic after a reading of the radical behaviorism that formed the core

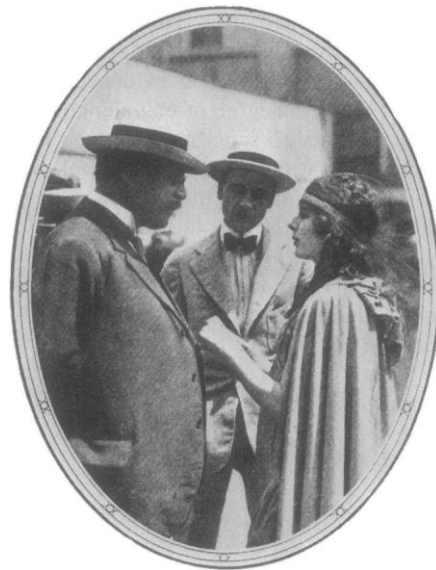
of Münsterberg's psychology (his “action theory”), particularly his motor theory of thinking and his prescriptions for a utopian society engineered on the basis of techniques of behavior control (the systematic delivery of rewards and punishments)—all this in the generation prior to John B. Watson's behaviorist revolution. (Although Münsterberg placed more emphasis on heredity than did most behaviorists, Watson still cited him as a source of inspiration.)

As a thoroughly assimilated German Jew, Münsterberg defended Teutonic superiority. He was propelled by a naïve faith in a Prussian style of planned social progress—a vision in which he perceived his German Fatherland as the model that all other nations should be taught to follow. He saw his mission in coming to America to be precisely that teaching. As this mission unfolded he explained that the problems of politics, of morality, indeed of all society, could be conquered through the application of his “psycho-technology.” The only further elements required for utopia were, in his mind, techniques of administrative organization and authority (then well advanced in his homeland). Teddy Roosevelt, for one, was highly sympathetic.

Although he remained at Harvard for the rest of his life, Münsterberg would never relinquish German citizenship and he would fight desperately against the U.S. entry into World War I. At the time of that latter event, which just about coincides with his sudden death, Münsterberg had fallen in public esteem on this continent from a position about as high as an academician can attain to a position so low that it may well have been unsafe for him to walk the streets.

All of this drama and more is laid out in exceptional scholarly detail in Matthew Hale's book, which is a valuable contribution to the literature on the tangled and complex beginnings of modern experimental and professional psychology.

Although large portions of Hale's book concern academic politics and cultural and international affairs, historians of psychology will find many parts of it enlightening with regard to their more specific concerns. For example, there is the falling-out between Münsterberg and his teacher Wilhelm Wundt. As Hale shows us, Münsterberg's goal was “to provide an atomistic and mechanistic explanation of both society and the mind.” Wundt steadfastly opposed that orientation with his own organismic school of thought, then known as “voluntarism.” Münsterberg had argued that Wundt's “creative volitional process” was nothing



Hugo Münsterberg interviewing movie actress Anita Stewart in 1915. [From Münsterberg's “Why we go to the movies,” *Cosmopolitan* 60, 23 (Dec. 1915), reproduced in *Human Science and Social Order*]

more than sensory-motor action. James, at Harvard, was much attracted to such views as Münsterberg's because they shared in the spirit of James's theory of emotion.

Inconsistency, however, may have been the clearest characteristic of Münsterberg's work. Or, perhaps more accurately, he showed a remarkable capacity to compartmentalize his mind. Thus when he lectured to psychologists they heard his mechanistic theories, but when he lectured to philosophers they heard a mentalistic idealism. This compartmentalization was not unconscious; it was deliberately advocated as constituting properly different “levels of discourse.” And he was capable of radical changes in his views. In later life he moved back to a position close to Wundt's voluntarism.

Most of Münsterberg's serious theoretical works were written in German, never appearing in English. They were widely read and commented on in Europe but remained largely unknown in his adopted country. What Münsterberg's American audience did receive—and what he is most remembered for today—are his writings in English on applied psychology, every conceivable aspect of applied psychology. This fractional representation of Münsterberg in English is still enough (larger than the entire output of most of his American contemporaries) to allow Hale to present Münsterberg as the best-known psychologist in America early in this century.

The “behaviorist” influence that