Daniel E. Berlyne: 1924-1976

Daniel E. Berlyne, Professor of Psychology at the University of Toronto, died at the age of 52 in Toronto on November 2, 1976, after a prolonged illness and several operations. He fought the disease courageously and stoically to the very end. It was entirely characteristic of Daniel Berlyne that he chaired a meeting of the American Society of Aesthetics in Toronto less than a week prior to his death. He is survived by Hilde Berlyne, his wife of twenty-three years, and three daughters.

Daniel Berlyne was born on April 25, 1924, in Salford, near Manchester, in England. He attended Manchester Grammar School and subsequently went to Cambridge University, where he received his B.A. in 1947 and M.A. in 1949. His first academic position was at St. Andrews University, Scotland. In 1951 he went to Yale University, where he obtained a Ph.D. after two years in residence, although in the second of these years he was already teaching full time at Brooklyn College in New York City. Faced with visa problems, Berlyne returned to Great Britain in 1953 and taught at the University of Aberdeen, Scotland, until 1956, when he became a Fellow at the Center for Advanced Study in the Behavioral Sciences at Palo Alto, California, which had opened only a couple years earilier. In the following year (1957-58), Berlyne was a Visiting Associate Professor at the University of California, Berkeley. He spent the next year with Jean Piaget as Membre-résident at the Centre International d'Epistemologie Génétique in Geneva, Switzerland. From Geneva, Berlyne returned to North America and was a Visiting Scientist in 1959-60 at the National Institute of Mental Health in Maryland. After a year and a half as Associate Professor at Boston University, he came to the University of Toronto, as Associate Professor, in January of 1962, becoming Professor of Psychology in the following year. Except for a year (in 1968-69) at Institut d'Esthétique et des Sciences de l'Art at the University of Paris as a NATO-Heineman Visiting Professor, Berlyne spent all of the last quarter of his life at the University of Toronto.

Daniel Berlyne's death put a sadly premature end to a highly distinguished scientific career. He had written or been co-author of seven books and some 150 journal articles and book chapters, and had received many honors, including election as Fellow of the Royal Society of Canada, Fellow of the British Psychological Society, and Fellow of several divisions of the American and Canadian Psychological Associations. He had been invited to lecture at universities on four continents, and had been President of the Canadian Psychological Association (1971-72), President of the General Psychology (1973-74) and Psychology and the Arts (1974-75) divisions of the American Psychological Association, and President (since 1974) of the International Association of Empirical Aesthetics. In 1974, Berlyne was also Co-

134 Konečni

President of the XVIIIth International Congress of Applied Psychology in Montreal and Vice-President for the United States and Canada of the Interamerican Society of Psychology.

Such are the bare facts that reveal little of Daniel Berlyne as a brilliant scientist, an outstanding scholar, and a remarkably erudite man, and reveal even less of his complex and fascinating personality.

Berlyne made important experimental and theoretical contributions to an astounding number of areas in experimental psychology (broadly defined), including exploratory behavior, curiosity, physiological arousal, attention, play behavior, humor, thinking, and experimental aesthetics. However, a good deal of order and several unifying threads underlie this diversity. Berlyne was at his best as a theoretician and integrator, and his life's work can perhaps be most succinctly described as an inspired attempt to achieve understanding of a broad array of human and animal behavior in terms of a small number of motivational principles. Indeed, Berlyne was above all a motivation theorist. He wanted to know why organisms display curiosity and explore their environment, why they seek knowledge and information, why they look at paintings or listen to music, what directs their train of thought. All of these diverse questions were dealt with in the context of what may be labeled a theory of "collative" motivation. The theory is essentially concerned with the hedonic effects of fluctuations in arousal level induced by exposure to stimuli differing in attributes such as novelty, complexity, surprisingness, and incongruity. Berlyne termed these stimulus dimensions "collative" in part to indicate that their effects are linked to operations that include comparing the currently present stimuli to those experienced in the past and evaluating the discrepancy between stimuli and expectations, but also to distinguish them from the more frequently studied classes of stimuli, notably the "psychophysical" (e.g., loudness) and the "ecological" ones (whose effects are derived from past associations with reward and punishment).

Although some aspects of the concept of arousal can be considered analogous to some aspects of the concept of drive, and although Berlyne has often been represented as one of the principal heirs of the Hullian school in learning and motivation, he had, in fact, repeatedly criticized many of the basic tenets of Hull's theory (e.g., the reinforcing properties of drive reduction in the influential 1967 paper in the Nebraska Symposium on Motivation), and had generally gone a long way beyond the Hullian position through the many original ideas underlying the concept of collative motivation. (There is good evidence that Berlyne had had an intimate knowledge of the work of C. L. Hull and other learning theorists of the 1930s and 1940s well before he came to Yale University in 1951. At that time, Hull was ailing, and he died the following year. Berlyne's thesis advisor was Carl I. Hovland and the other committee members were Irvin L. Child and Neal E. Miller.) The concern with collative variables and with human and animal behaviors that do not necessarily lead to the gratification of the hunger, thirst, and sex drives has been a notable feature of Berlyne's work spanning twenty-seven years, as evidenced in a simple way by the titles of his first published paper ("Interest' as a psychological concept," British Journal of Psychology, 1949), his doctoral thesis ("Some aspects of human curiosity"), and some of the papers that will be published posthumously (e.g., "Motivation of the quest for knowledge," in J. R. Royce, ed., Inquiries into a psychological theory of knowledge).

DANIEL E. BERLYNE: 1924-1976 135

Berlyne's most important single work is undoubtedly his 1960 book, Conflict, arousal and curiosity. This tour de force—which has since influenced so many in psychology and other disciplines—integrated Berlyne's and others' work in the areas of exploratory behavior, arousal, and curiosity with the classical behavior-theory approaches, laid the foundation of the theory of collative motivation, and gave a preview of later applications to art, intellectual processes, and humor. In the book, Berlyne made a serious effort to link collative motivation to the latest advances in neurophysiology and information theory. In many ways, the topics covered in the book and the new research directions suggested by Berlyne's views were ahead of their time. Although the book was well received and widely read from the start, its influence seems to have grown with the passage of years; casual inspection of the literature leads one to the impression that the book has had considerable delayed impact and has been more frequently cited in the 1970s than the 1960s.

In 1965, Berlyne published Structure and direction in thinking, a joint application of the S-R (Berlyne preferred the term "neoassociationist") position and of the collative-motivation views to "epistemic" behavior (e. g., directed thought and knowledge-seeking). This book has been translated into five languages, but has not had, in the English-speaking world, the impact that it deserves, probably because its "Hullian" and insufficiently "cognitive" flavor conflicted with the trends and taste of the times. This is quite unfortunate, since the book raised, and partly provided answers to, some important questions concerning the motivation and dynamics of directed thought. Motivational aspects of thinking have been largely ignored by most of the present-day cognitive psychologists, in part because a structuralist bias is inherent to the "flowchart" approaches that characterize so much of the current work on information processing.

In the late 1960s, Berlyne's attention increasingly turned toward the application of the collative-motivation model to aesthetic phenomena, and in 1971 he published Aesthetics and psychobiology, which many regard as the best and most influential work published so far on the psychology of art. Perhaps the key aspect of Berlyne's "new experimental aesthetics" is a careful consideration of both the factors that govern choice between aesthetic stimuli and the effects of exposure to such stimuli. Another important aspect of the work is a detailed and illuminating analysis of the relationship between specific components of works of art and artistic "devices," on the one hand, and collative variables and fluctuations in arousal level, on the other. Berlyne followed the 1971 book by an edited work, Studies in the new experimental aesthetics (1974), which is a collection of experimental reports by Berlyne, his students, and colleagues on a variety of topics relevant to the application of the collative-motivation theory to aesthetics.

Overall, Berlyne was probably the most important single source of inspiration for the current wave of psychological interest in experimental aesthetics. He expended a great deal of energy during the last decade of his life on the task of carving out a respectable place for experimental aesthetics within psychology; moreover, he contributed more than perhaps anyone else to the gradual (and grudging) acceptance by artists, art historians, and aestheticians of the *possibility* of a rigorous, scientific, psychological approach to aesthetic phenomena. Toward the very end of his life, Berlyne was able to secure a first-rate English-language publication outlet for experimental aesthetics by

136 Konečni

becoming co-editor (with Robert Francès) of *Scientific Aesthetics/Sciences de l'Art*, the predecessor of which had been published only in French. The first issue of the new bilingual version of the journal appeared in 1976.

Daniel Berlyne belonged to the rare breed of psychologists who are equally comfortable with humans and rats as research subjects, equally knowledgeable about the work of Aristotle, Michelangelo, Freud, Pavlov, or Piaget, and equally familiar with the American and European (including—or perhaps, especially—Soviet) psychological literature. He was a highly cultured, versatile, and immensely erudite man. Within psychology, he could talk equally informatively and intelligently about the meaning of the "golden section," the meaning of a light increment to the rat, and the meaning of humor (all of these issues are, of course, relevant to collative motivation and are discussed in Berlyne's publications). It is not surprising that he was frequently asked to contribute entries on a variety of topics to the major encyclopedias (e.g., on Piaget, on theories of thought).

While having an incredible command of the psychological literature, as well as of the literature in the sciences and humanities in general, Berlyne was a very independent thinker. Both his choice of research topics and many aspects of his theorizing are highly original. It is interesting to note how little he appears to have been influenced by some of the major figures of his time. For example, Berlyne's year with Piaget resulted in several joint publications and in some writing about Piaget, but had almost no discernible influence on Berlyne's subsequent experimental and theoretical work. In his day-to-day activities also, Berlyne apparently had no strong need for a sounding board for his ideas, despite the fact that many colleagues and students were available. He was an efficient worker and writer, able to interrupt the task of dictating an article in order to give a lecture, and then effortlessly to resume dictating the article immediately after class. Typically, the dictated version and one revision were all an article of his needed; he was in complete command of the subtleties of the English language and very fussy about its correct use. It is interesting that despite his great productivity, he apparently seldom worked at night or on weekends.

Berlyne's versatility in psychology was matched perhaps only by the versatility of his interests in private life. He gradually acquired a working knowledge of ten or eleven ancient and modern languages, fluently spoke six or seven, and had a close to encyclopedic knowledge of philosophy, art history, and the general history of ideas, in all of which areas he read heavily and regularly. Berlyne was an accomplished pianist, an unaccomplished occasional jogger at the University of Toronto's Hart House, a walker in parks, and a pacer in his office and in seminars. He went to see films at least once a week (often silent ones) and was an avid collector—of books, of paintings, of jokes, of subways (one of his many goals being to ride on every subway in the world).

With his colleagues and students, Berlyne was invariably kind, considerate, and perhaps a little shy—a gentle man and a gentleman. His fine sense of humor, subtle witticisms, and skillful telling of anecdotes were appreciated by all who knew him. He was a highly esteemed teacher and his many graduate students could always count on his friendship, loyalty, and support.

Daniel Berlyne was undoubtedly a brilliant and important figure in experimental psychology. His original and penetrating theoretical contributions

DANIEL E. BERLYNE: 1924-1976 137

have opened new research areas, introduced a fresh perspective on some old problems, and brought about a major integration of seemingly divergent issues in various areas of human and animal motivation. Judging by some prominent current research trends in several fields within psychology (including human motivation, social psychology, experimental aesthetics), the influence and stature of the theory of collative motivation is likely to continue to grow. As an outstanding scientist, scholar, and teacher, Daniel Berlyne is missed by all in psychology and related disciplines in many countries of the world. Those of us who had the privilege of knowing this extraordinary human being personally have an even deeper sense of loss.

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Note

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