

- With M. Alderete & R. Tokarz. Luteinizing hormone-releasing hormone (LHRH) and thyrotropin releasing hormone (TRH) induction of female sexual receptivity in the lizard, *Anolis carolinensis*. *Neuroendocrinology*, 29, 165-170.
- With J. Morrell, A. Ballin, A. Morgentaler, & D. Pfaff.  $^3\text{H}$ -estradiol,  $^3\text{H}$ -testosterone, and  $^3\text{H}$ -dihydrotestosterone localization in the brain of the lizard, *Anolis carolinensis*: An autoradiographic study. *Journal of Comparative Neurology*, 188, 201-224.
- With J. Conner. Sperm transfer and oviducal sperm transport and storage in the lizard, *Anolis carolinensis*. *American Zoologist*, 19, 986.
- With R. Tokarz. Temporal pattern of estrogen-induction of female sexual receptivity in the lizard, *Anolis carolinensis*. *American Zoologist*, 19, 966.
- With M. Alderete & R. Tokarz. Luteinizing hormone-releasing hormone and thyrotropin-releasing hormone induction of female sexual receptivity in the lizard, *Anolis carolinensis*. *American Zoologist*, 19, 965.

#### In Press

- Interrelationships between ecological, behavioral and neuroendocrine processes in the reproductive cycle of *Anolis carolinensis* and other reptiles. In J. S. Rosenblatt, R. A. Hinde, C. G. Beer, & M.-C. Busnel (Eds.), *Advances in the study of behavior* (Vol. 11). New York: Academic Press.
- With L. Garrick. Methods for inducing reproduction in captive reptiles. In J. Murphy (Ed.), *Reproductive biology of captive reptiles*. Lawrence, Kansas: Society for the Study of Amphibians and Reptiles. (Symposium, Vol. 1)
- With J. Conner. Sperm transfer and oviducal sperm transport and storage in the lizard, *Anolis carolinensis*. *Journal of Morphology*.
- With K. Farragher. The role of the basal hypothalamus in the regulation of reproductive behavior in the lizard, *Anolis carolinensis*: Lesion studies. *Hormones and Behavior*.
- With K. Fitzgerald. "Sexual" behaviour in parthenogenetic lizards (*Cnemidophorus*). *Proceedings of the National Academy of Sciences*.
- With N. Greenberg. Function and causation of social signals in lizards. *American Zoologist*.

### John F. Kihlstrom

#### CITATION

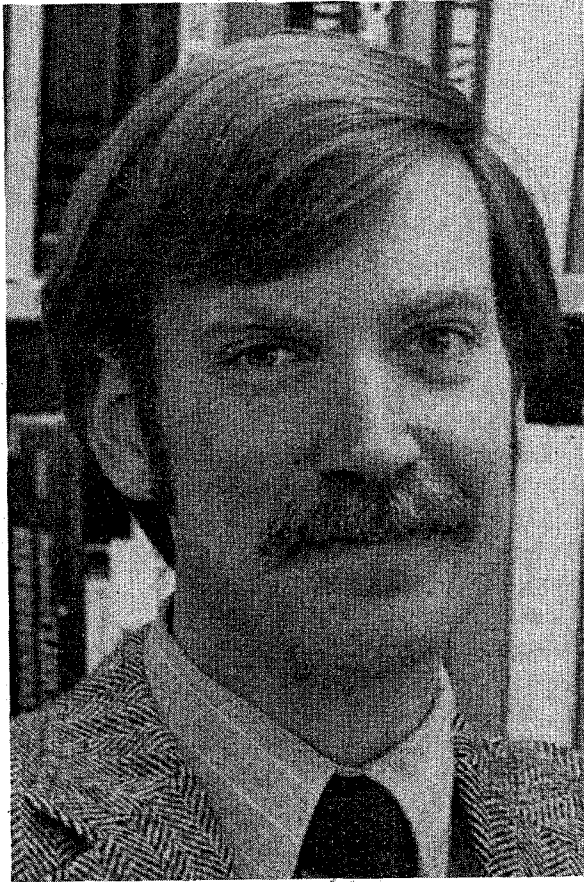
"For his pioneering work which resulted in a reevaluation of posthypnotic amnesia and thereby helped to integrate the study of hypnosis with recent developments in cognitive psychology. He clearly demonstrated that suggestions of posthypnotic amnesia lead to transient, reversible difficulties in retrieval lawfully related to hypnotizability, and that partial amnesia is associated with disordered temporal recall. These and related observations that have emerged from his programmatic efforts have served to resolve long-standing controversies and to organize our understanding of hypnosis in the context of broad psychological processes."

#### BIOGRAPHY

John Kihlstrom was born October 24, 1948, and was raised in Horseheads, New York, which he locates, only slightly incorrectly, as "between Painted Post and Big Flats." The schools in Horseheads had limited resources, but two high school music teachers, Joseph Crupi and James Wilson, gave him important lessons in values and discipline. After toying with the notion of a career in music, he settled on psychology. In 1966 Kihlstrom enrolled at Colgate University, a small school with an outstanding liberal arts curriculum and a faculty of dedicated teachers.

Kihlstrom began his honors major in psychology by running cockroaches in T mazes and goldfish in Skinner boxes. When he was given the opportunity to work for a faculty member as a research assistant, he immediately chose Bill Edmonston, the department's lone personality psychologist; he was extremely dismayed to discover that Edmonston did hypnosis research. Nevertheless he stuck with it, helping in a series of studies on habituation and classical conditioning in hypnotized subjects. Over the next two years he became fascinated with hypnotic phenomena and their implications, and in his senior year he threw himself enthusiastically into a thesis on personality changes in hypnosis. He also began to look for a graduate school that would give him a solid education in psychology and tolerate his interest in hypnosis. He received his bachelor's degree with high honors in psychology in 1970 and moved to Philadelphia to begin graduate work at the Department of Psychology, University of Pennsylvania.

Penn provided exactly what Kihlstrom was looking for and much more. He joined Martin Orne's Unit for Experimental Psychiatry, a laboratory at The Institute of Pennsylvania Hospital devoted to research on hypnosis and related topics. There he found a group of investigators who were concerned, as he was, with fleshing out the relationships between hypnosis and other psychological phenomena. He began to work closely with Fred Evans, who put him on the problem of posthypnotic amnesia and introduced him to both the writings of F. C. Bartlett and the concept of dissociation. Orne set the atmosphere for the work, with his emphasis on ecological validity in psychological research. Looking back, Kihlstrom sees Orne's insistence on viewing experimental situations from the subject's point of view as the fundamental fac-



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tor contributing to his interest in cognitive approaches to personality. While at the Unit he met Susan Jo Russell; they were married in 1975.

Kihlstrom also began to work his way through Penn's unique Program of Research Training in Personality and Experimental Psychopathology, directed by Julius Wishner. Wishner, though skeptical of Kihlstrom's interest in hypnosis, nevertheless gave him wholehearted personal support and helped him to see the links between hypnosis and broader issues in psychopathology. Penn's faculty was (and is) well stocked with generalists who exposed him to a wide range of psychological issues and concepts through a series of proseminars, lunch seminars, and less formal encounters. Particularly important were sessions with Henry Gleitman, Burt Rosner, and Paul Rozin on memory and cognitive neurology and Dick Solomon on classical conditioning and emotions. In his last year Kihlstrom took an internship in medical psychology at the Temple University Health Sciences Center, directed by Lyle Miller and Barry Shmavonian. He

received his PhD, and the nonsense syllable TUL, in 1975.

Kihlstrom then moved to Harvard to take up a post as assistant professor in the Department of Psychology and Social Relations (he has recently been reappointed as associate professor and Chair of the Research and Training Group in Personality). Harvard was attractive for a number of reasons. The recent fusion of the two departments meant exciting debates concerning the undergraduate and graduate curricula, and an opportunity to help foster a linking of the hard and soft areas of the discipline into a single general psychology. Always concerned with historical roots, Kihlstrom was not unaware of the interest in hypnosis displayed by such early Harvard psychologists as James and Prince, and the tradition established there by Henry Murray for the study of personality was still palpable. At Harvard he developed a friendship with Reid Hastie, who has generously shared his knowledge of memory and social cognition, and began a collaboration with Ronald Shor at the University of New Hampshire. Kihlstrom has worked with a number of graduate students, including Heather Brenneman, Beverly Chew, Bob Dworkin, Judy Harackiewicz, and Bill Nasby. Not all of these individuals have been particularly interested in hypnosis, and they have led Kihlstrom to develop his interests in other areas of personality.

At the invitation of Jack Hilgard, Kihlstrom spent 1977-1978 as visiting assistant professor at Stanford University, working in the Laboratory of Hypnosis Research. Since his undergraduate days he had admired Hilgard as a generalist within psychology and had closely followed his work on hypnosis. The year offered an opportunity to explore Hilgard's neodissociation theory of divided consciousness and its implications for amnesia and other topics within the wider domains of personality and cognition. It also freed Kihlstrom to initiate a new direction in his research without the usual distractions of faculty life. Equally important were the hours spent talking with Hilgard and Ken and Pat Bowers, two other visitors to the laboratory, about problems and personalities in psychology at large. The hospitality of the psychology department and the presence of an especially stimulating group of visitors also allowed Kihlstrom to continue his education in psychology. In particular, he profited from conversations with Gordon Bower and Gus Craik on memory and with

Nancy Cantor and Walter Mischel on personality. In 1979 he joined Cantor, now at Princeton, in convening a weekend conference of young investigators interested in personality and cognition. The two continue to collaborate on a variety of projects.

Kihlstrom sees hypnosis as relevant to a broad range of topics within the domain of personality, particularly the relations between behavior and experience and the problem of consciousness. A fundamental feature of hypnosis is the existence of stable individual differences in the ability to experience hypnosis, posing the challenge of developing appropriate instruments for measuring these differences that involve both objective behavioral criteria and a sensitivity to subjective experience. Hypnotizability proves to be multidimensional, so there is the additional problem of analyzing its component abilities. There is the further matter of determining the correlates of hypnotizability within the wider domain of personality and of tracing developmental changes in the capacity for hypnosis and the various factors that influence them. Hypnosis also takes place in an interpersonal context and provides a model situation for the study of dyadic relationships and the impact of personal expectations and social demands on behavior and experience. Finally, the alterations in perception and memory and their attendant paradoxes, which lie at the core of hypnosis, indicate that complex mental processes can operate outside phenomenal awareness. Neodissociation theory paints a rather different picture of unconscious mental processes from that provided by classical psychodynamic theories, and detailed study of hypnotic dissociations may provide a new perspective on the organization of control processes within the cognitive system which may be brought into the service of personality. Thus, hypnosis speaks to both aspects of the study of personality: individual differences and the general processes that mediate the interaction between the person and the world.

In his own research, supported by grants from the National Institute of Mental Health and the Institute of Experimental Psychiatry, Kihlstrom has focused on posthypnotic amnesia—the temporary inability of some subjects to remember the events and experiences that transpired during hypnosis. Kihlstrom chose amnesia because it epitomizes the dissociations that lie at the core of hypnosis. The research has been conducted in three

phases. The first, mostly conducted in collaboration with Fred Evans, was essentially descriptive and phenomenological and developed a detailed picture of amnesia as it is manifested in standardized hypnotic procedures. In the second phase, theoretical considerations began to play an important role. Here, again in collaboration with Fred Evans, Kihlstrom began to explore some of the mechanisms underlying posthypnotic amnesia. He and Evans proposed that posthypnotic amnesia represents a disorganization of memory-search processes, with the result that material available in memory becomes inaccessible to active recall. Examining the order of recall of suggestions administered during standardized hypnotic procedures, they found that hypnotizable subjects showed lower levels of temporal sequencing than did their unsusceptible counterparts. Follow-up studies indicated that the disorganization was a specific effect of the amnesia suggestion and represented a mediational rather than a production deficiency. The most recent phase of the research, employing both standardized hypnotic procedures and conventional verbal-learning paradigms, indicates that amnesic subjects may be able to remember highly generalized information about an event or even capitalize on information or skills acquired during hypnosis, but they are not always able to reconstruct the spatiotemporal and experiential context in which the target events took place.

These findings indicate that posthypnotic amnesia involves a temporary dissociation of contextual features from memory traces. New experiments on amnesia will attempt to clarify the nature of both the apparent dissociation and the cognitive processes that underlie it, but Kihlstrom is also branching out into other areas of research. For example, he is currently planning a series of investigations of the hypnotic enhancement of memory. Hypermnnesia is relevant to the construct of dissociation because it appears to involve the retrieval of memories that are ordinarily inaccessible to phenomenal awareness. Both amnesia and hypermnnesia raise questions about memory in general that can be appropriately addressed outside of hypnosis as well, and Kihlstrom has begun to explore some problems in verbal learning and autobiographical memory in experiments conducted in the normal waking state. These studies are expected to influence future hypnosis research. Kihlstrom maintains ties to his training in experimental psychopathology by pursuing an interest in

clinical memory syndromes. He has also initiated an entirely new direction of research with some projects on the self-concept and on social cognition.

There are other things in Kihlstrom's life besides psychology: progressive politics and advocacy journalism, early and contemporary classical music, good food and conversation. He and Susan Jo Russell share an apartment in Cambridge with two cats, Alexander and Boris. Russell is a staff developer in the Cambridge public schools, teaches part-time at Lesley College, and is working on a doctorate in mathematics education; she also edits Kihlstrom's papers. Both run for exercise and relaxation, occasionally play recorder duets, and enjoy vacations on the Cape and Nantucket.

#### BIBLIOGRAPHY

1971

With W. E. Edmonston. Alterations in consciousness in neutral hypnosis: Distortions in semantic space. *American Journal of Clinical Hypnosis*, 13, 243-248.

1973

With F. J. Evans & E. C. Orne. Quantifying subjective reports during posthypnotic amnesia. *Proceedings of the 81st Annual Convention of the American Psychological Association*, 8, 1077-1078.

With F. J. Evans. Posthypnotic amnesia as disrupted retrieval. *Journal of Abnormal Psychology*, 82, 317-323.

1975

The effects of organization and motivation on recall during posthypnotic amnesia (Doctoral dissertation, University of Pennsylvania). *Dissertation Abstracts International*, 36, 2473B-2474B. (University Microfilms No. 75-24,082.)

1976

Abnormal behavior: A social-psychological view (Review of A. Farina, *Abnormal psychology*). *Contemporary Psychology*, 21, 885-886.

With F. J. Evans. Recovery of memory after posthypnotic amnesia. *Journal of Abnormal Psychology*, 85, 564-569.

1977

New tools for treatment, but more than placebos (Review of I. Wickramasekera [Ed.], *Biofeedback, behavior therapy, and hypnosis: Potentiating the verbal control of behavior for clinicians*). *Contemporary Psychology*, 22, 573-575.

With F. J. Evans. Residual effect of suggestions for posthypnotic amnesia: A reexamination. *Journal of Abnormal Psychology*, 86, 327-333.

Models of posthypnotic amnesia. In W. E. Edmonston (Ed.), *Conceptual and investigative approaches to hypnosis and hypnotic phenomena*. *Annals of the New York Academy of Sciences*, 296, 284-301.

With E. R. Hilgard, H. J. Crawford, & P. G. Bowers. *Manual for the tailored SHSS:C*. Stanford, Calif.:

Stanford University, Department of Psychology, Laboratory of Hypnosis Research. (NAPS Document No. 03453)

1978

With R. H. Dworkin. An S-R inventory of dominance for research on the nature of person-situation interactions. *Journal of Personality*, 46, 43-46.

With S. Mineka. Unpredictable and uncontrollable events: A new perspective on experimental neurosis. *Journal of Abnormal Psychology*, 87, 256-271.

Attempt to revive a forgotten language by means of hypnosis (Hypnosis Research Memorandum No. 148). Stanford, Calif.: Stanford University, Department of Psychology, Laboratory of Hypnosis Research.

With F. J. Evans. Generic recall during posthypnotic amnesia. *Bulletin of the Psychonomic Society*, 12, 57-60.

Context and cognition in posthypnotic amnesia. *International Journal of Clinical and Experimental Hypnosis*, 26, 246-257.

With M. Twersky. Relationship of posthypnotic amnesia to aspects of waking memory. *International Journal of Clinical and Experimental Hypnosis*, 26, 292-306.

With R. E. Shor. Recall and recognition during posthypnotic amnesia. *International Journal of Clinical and Experimental Hypnosis*, 26, 330-349.

1979

With F. J. Evans (Eds.). *Functional disorders of memory*. Hillsdale, N.J.: Erlbaum.

With F. J. Evans. Memory retrieval processes in posthypnotic amnesia. In J. F. Kihlstrom & F. J. Evans (Eds.), *Functional disorders of memory*. Hillsdale, N.J.: Erlbaum.

With E. R. Hilgard, H. J. Crawford, & P. G. Bowers. A "tailored" SHSS:C, permitting user modification for special purposes. *International Journal of Clinical and Experimental Hypnosis*, 27, 125-133.

(Guest Ed.). Special issue: Hypnosis and psychopathology. *Journal of Abnormal Psychology*, 88(5).

Hypnosis and psychopathology: Retrospect and prospect. *Journal of Abnormal Psychology*, 88, 459-473.

In Press

Posthypnotic amnesia for recently learned material: Interactions with "episodic" and "semantic" memory. *Cognitive Psychology*.

With F. J. Evans, E. C. Orne, & M. T. Orne. *Attempting to break posthypnotic amnesia*. *Journal of Abnormal Psychology*.

With N. Cantor (Eds.). *Personality, cognition, and social interaction*. Hillsdale, N.J.: Erlbaum.

On personality and memory. In N. Cantor & J. F. Kihlstrom (Eds.), *Personality, cognition, and social interaction*. Hillsdale, N.J.: Erlbaum.

With W. Nasby. Cognitive tasks in clinical assessment: An exercise in applied psychology. In P. C. Kendall & S. D. Hollon (Eds.), *Cognitive-behavioral interventions: Assessment methods*. New York: Academic Press.

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CITATION

"For his outstanding contributions to research and theory concerning the acquisition of a first lan-