

Princeton University

HONORS FACULTY MEMBERS
RECEIVING EMERITUS STATUS



May 2017

The biographical sketches were written by staff and colleagues in the departments of those honored.

CONTENTS

Faculty Members Receiving Emeritus Status 2017

Dilip J. Abreu	3
Anne Catherine Case	6
Esther da Costa Meyer	9
Benjamin A. Elman	11
Joan Stern Girgus	13
Jan T. Gross	17
Barry Leonard Jacobs	20
Robert Owen Keohane	22
Yannis George Kevrekidis	26
Daniel N. Osherson	29
Samuel George H. Philander	33
Jean-Herve Prévost	36
Mark David Rose	39
Lawrence Rosen	42
William Bailey Russel	45
George W. Scherer	48
Brent Donald Shaw	50
Arthur John Stewart Smith	54
Edwin S. Williams	57

DANIEL N. OSHERSON



Daniel Osherson will transfer to emeritus status on July 1, 2017, after fifteen years on the faculty at Princeton University. Following a long and unusual journey through the American academy, as well as several European stops, it was Princeton that Dan claimed most commanded his affection.

Dan was born in New York, and grew up playing pickup basketball in the streets of New York. He studied jazz piano from an early age, striving for the lyricism that graced musicians like Bill Evans and Oscar Peterson in the '50s and '60s. By the end of high school, it became clear to Dan that jazz would not be his most successful calling, and that he would need to pursue his aesthetic ambition in a different domain. A course at the University of Chicago in 1968 gave Dan this new aesthetic. It presented the analysis of natural language syntax in terms of the abstract automata that could generate all (but only) the strings of words that were “well-formed” in the target language. The leading light of this new movement was Noam Chomsky, equally known for his critique of U.S. foreign policy in Southeast Asia. Toiling to understand both facets of Chomsky’s thought in those grim college days marked Dan for life. Among other ambitions, he was determined to uncover the formal structure of some human intellectual competence. Much of the technical work was in the areas of syntax, language acquisition, and human reasoning abilities; the ethical and moral dimensions emerged in the preoccupation with U.S. foreign policy and the protest movements, which influenced Dan’s lifestyle and thinking.

Dan joined the graduate program in psychology at the University of Pennsylvania in 1970, where he focused on the teachings of the Swiss psychologist Jean Piaget, who had been highly influential in promoting mathematical models of children’s thought for decades. Close study of Piaget’s writings revealed to Dan formal inconsistencies that seemed to undermine the Piagetian theory. Dan attempted to construct an alternative theory to Piaget’s in the form of a logic that coincides with the child’s intellectual achievements. That work, including a profound critique of Piaget, culminated in four volumes

that were published before Dan even finished graduate school, and it led to an offer to join the psychology faculty at Stanford University (at the tender age of twenty-four).

At Stanford, the Department of Philosophy graciously invited Dan to its talks and seminars, where Dan was profoundly influenced by several of the philosophers, including Julius Moravcsik, Patrick Suppes, and Georg Kreisler. Conversations with these remarkable scholars convinced Dan of the need to deepen his knowledge of logic, computability, and the theory of recursive functions. Fearing that the California sunshine was an obstacle to deep study, Dan resettled at the University of Pennsylvania as an assistant professor of psychology and proceeded to audit a series of courses. Of particular significance, Dan studied with Scott Weinstein, who was just beginning his career in logic and complexity theory. Scott and Dan became close collaborators and published a long list of articles devoted to the theory of model selection by rational agents with various kinds of cognitive features (e.g., limited memory for past experience). These ultimately led to the book *Systems That Learn: An Introduction to Learning Theory for Cognitive and Computer Scientists*, now in its second edition.

Picturing the prelinguistic infant as a scientist tasked with discovering a grammar for its ambient language led to attempts to bring results on model selection to bear on language acquisition. To pursue this line of research, Dan took a position at Massachusetts Institute of Technology where Chomsky, Jerry Fodor, and other researchers from a variety of programs were creating the new discipline of cognitive science. This novel endeavor's modus operandi was to cross the lines of traditional disciplines in search of ideas about the structure and mechanisms of human thought. Contributions came from linguistics, philosophy, anthropology, computer science, neuroscience, and psychology. It is difficult to assess today whether the advances labeled "cognitive science" would have been achieved without the new terminology (and the promises made on its behalf). But there is no doubt that the enterprise stimulated discussion by exposing concepts and theories to wider criticism than before. Dan became a prominent member of MIT's Department of Brain and Cognitive Sciences and, influenced by ongoing research and discussions, started working on the psychology of probabilistic reasoning and on the interface between deductive logic and inductive inference with Edward E. Smith and eventually with his student, Eldar Shafir. Around that

time he published a four-volume edited collection, *An Invitation to Cognitive Science*, which became a classic reference work in the field.

Partly due to the political and social realities of the times, Dan grew restless living in Boston, and spent more and more time in France, where he eventually met his wife, Yolande, and resolved to forge a career in Europe. When he was offered the directorship of a Swiss laboratory in computer science, the family moved to Martigny, Switzerland, where Dan managed to find time away from administrative duties to conduct original research. Analyzing inductive inference within a logical (“first order”) framework, Dan exploited several results in highly multidisciplinary directions, ranging from confirming (in the context of some non-trivial assumptions) a key prediction of Chomskyan linguistics to offering a learning theoretic resolution of Arrow’s paradox (from economics). Still, four years of managerial duties in Switzerland were enough, and Dan accepted an offer to move to a medical university in Milan to teach cognitive science. This period saw some new projects in psychology as well as the exploration (using tools of recursion theory) of some game theoretic notions in cooperation.

Living and teaching in Italy was a happy period for Dan and his family, but after two and a half years it felt like time had come to return to academic life in the United States. Dan joined the psychology department at Rice University, with secondary appointments in the statistics and computer science departments. His principal collaborator at Rice was Moshe Vardi, with whom Dan worked on the problem of aggregating event probabilities culled from a panel of judges. It was also at Rice that Dan became interested in the use of fMRI to study the distribution of competences (e.g., logical versus probabilistic) across the human cortex. Dan’s first brain imaging experiments were performed with the young neuroscientist Martin Monti, who followed Dan from Rice University to Princeton’s Department of Psychology, in 2002.

At Princeton, Dan was offered the Henry R. Luce Professorship in Information Technology, Consciousness, and Culture, following a campus-wide competition.

In addition to pursuing projects on brain imaging, Dan met scholars in computer science (H. Vincent Poor), mathematics (Elliot Leib), and politics (Michael Miller) with whom he embarked on several joyful collaborations. These interdisciplinary projects

included the aggregation problem for probability judgments, the justification of probability for quantifying chance, a new proof of a theorem on random processes, and the study of voting systems that best represent the “will of the people.” There have also been collaborative projects on the effects of cranial concussion (with Annegret Dettwiler); on statistical testing (with Branden Fitelson); on the automatic read-out of emotions from faces (with Alexander Todorov); on conceptual composition in the brain (with Sean Baron); and on the perception of randomness in a sequence of visual or auditory events (with Jiaying Zhao); an empirical test of Nelson Goodman’s theory of simplicity or analysis of the nature of vagueness, carried out with Timothy Williamson; ongoing work with Scott Weinstein developing a new logic of preference, extended to the logic of deontic modalities (“ought” and “may”); and many other projects, too numerous to list exhaustively.

Dan’s immense knowledge and deep insights, accompanied by his sharp mind and dry wit, have made him an indispensable member of the psychology department. We look forward to his continued involvement in the years to come.