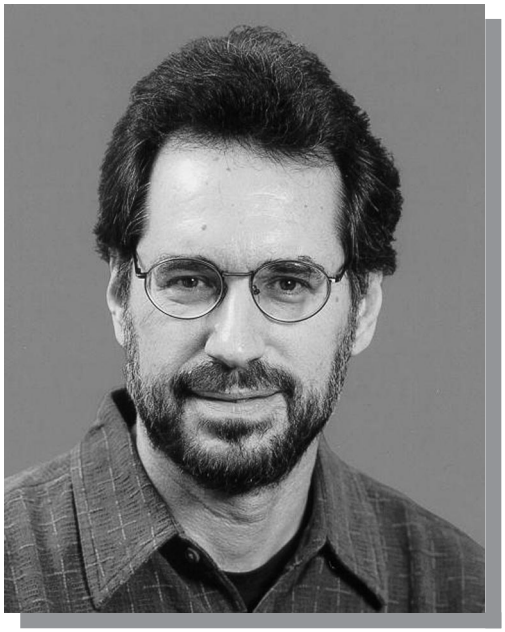

Sheldon Cohen

Award for Distinguished Scientific Contributions

Citation

"For his groundbreaking scientific contributions toward understanding the effects of stress and social support systems on human health and behavior. The depth and breadth of Sheldon Cohen's theoretical and empirical work, and his masterful talent for blending laboratory and field approaches, have made major contributions to a multitude of disciplines, including psychology, the environmental sciences, psychiatry, and medicine. His elegant research in psychoneuroimmunology has identified important behavioral, hormonal, and immune pathways that link stress, personality, and social networks to disease susceptibility. His many contributions to knowledge regarding important societal and health problems have helped build enduring bridges between the behavioral sciences and medicine."

Biography

Sheldon Cohen planned on studying law. A turning point in his educational interests came in his sophomore year at Wayne State University, when he took a methods course in social psychology taught by Reuben Baron. Baron invited Cohen to serve as a research assistant in his lab and later encouraged him to transfer to the University of Michigan to do an honors thesis under the mentorship of social psychologist Irwin Katz. The intellectual excitement and challenge Cohen experienced working with Baron and Katz (and his expectation that law school would be boring) provided the impetus for a change in his career path.

During his senior year at Michigan, Cohen became interested in the behavioral aftereffects of environmental stressors, particularly the possibility that noisy urban environments influence the development of cognitive skills. To pursue this interest, he went to graduate school at New York University to work with David C. Glass, who was studying the effects of uncontrollable environmental stressors. From Glass, Cohen learned how to frame big questions as manageable scientific problems as well as the day-to-day skills involved in running a laboratory. Cohen worked on several of Glass's studies on the "aftereffects" of stressor exposure and collaborated with Glass and Katz on studies of stigma and prejudice. However, he also pursued his passion to examine the effects of environmental noise on the adaptive responses and performance of schoolchildren. He tested the hypothesis that young children adapt to noisy urban environments by tuning out sound, and in turn, fail to learn subtle discriminations between speech sounds that are requisite in learning to read. The design of Cohen's study was to compare auditory discrimination and reading skills among children living in apartments built on bridges spanning a major highway. The apartments differed substantially in ambient noise level, but the tenants were similar in socioeconomic status and ethnic background. As predicted, children living in noisy apartments were poorer at phoneme discrimination and reading.

In 1973, Cohen became an assistant professor at the University of Oregon. Although his interests differed from those of his colleagues, he found enormous support from the entire Oregon faculty, with special intellectual guidance from Robyn Dawes, Lew Goldberg, Steve Keele, Mike Posner, and Mick Rothbart. He was also assisted in his research there by a core of able graduate students, including John Baer, Bob Hays, Harry Hoberman, Lynn Judge, Tom Kamarck, Garth McKay, Robin Mermelstein, Susan Phillips, and Shirlynn Spacapan.

He pursued several lines of research during his nine years at Oregon, including a continuation of his work on how children adapt to chronic stressors. He collaborated with David Krantz, Gary Evans, and Daniel Stokols on a longitudinal study comparing the responses of children attending school under the air corridor of Los Angeles International Airport with matched controls in quieter areas. Again, noise was associated with poorer reading skills but also with deficits in solving puzzles, feelings of helplessness, and elevated levels of blood pressure. Other work at Oregon included related theoretical articles on the costs of coping for behavior and health and on the effects of stress on the strategic use of attention. In the course of this work,

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he also developed the Perceived Stress Scale, which became a gold standard for assessing psychological stress.

At a NATO conference in 1978, Cohen heard about newly published data from the Alameda County (California) Study showing that people with more diverse social contacts (married, friends, family, social and religious groups) lived longer than people with less diverse networks. Cohen felt that psychological processes had to play a central role in this effect. He developed a theory of conditions under which social contacts buffered the effects of stress on health, a typology of "social support" and a scale (Interpersonal Support Evaluation List) to assess various types of support represented in the typology.

At Oregon, Cohen also collaborated with colleague Edward Lichtenstein in studies of the effects of stress and social support systems on quitting smoking. The collaboration lasted for over 10 years and produced evidence that stress triggered relapse, quitting reduced stress, and social networks played an important role in maintenance/relapse. It also produced the Partner Interaction Questionnaire—a measure of partner support when quitting smoking—and a collaborative article with 16 smoking investigators on the efficacy of self-quitting.

In 1982, Cohen moved to Carnegie Mellon University (CMU). The move provided him with colleagues who shared his research interests. It also opened new opportunities availed by access to the University of Pittsburgh Medical School. Psychologists who became long-term colleagues and collaborators in Pittsburgh included Michael Scheier, Margaret Clark, Vicki Helgeson, Karen Matthews, Stephen Manuck, Andrew Baum, Richard Schulz, and Tom Kamarck.

At CMU, he continued his focus on understanding the role of social networks in health and well-being. He collaborated with a former student, Tom Wills, in a comprehensive review of evidence on social networks and supports on health that became a *Citation Classic*. He also wrote theoretical articles on how social networks and supports "get under the skin" to influence health, worked with graduate student Marilee Coriell on research to determine whether givers and receivers agree when support is provided, and worked on the role of social personality factors in support and health processes. Finally, review and theoretical articles on the role of social networks in cancer with colleague Vicki Helgeson led to collaboration with Helgeson and Richard Schulz on a clinical trial comparing the efficacy of different types of social support for breast cancer patients.

In the mid-1980s, Cohen became interested in investigating the role of stress and social relationships in susceptibility to infectious disease. To conduct this research, he needed to study immunology, endocrinology, and virology. In 1987, he received a career development award from the National Institute of Mental Health to pursue this goal. The award lasted for 15 years and had an enormous impact on the trajectory of his career. With British psychologist Andy Smith and physician/virologist David Tyrrell, Cohen assessed stress, health practices, and some biological markers in healthy adults who were later exposed to a common cold virus. The question was, Does psychological stress predict who develops colds when exposed to an infectious agent? The answer was yes, and the groundbreaking article was published in the *New England Journal of Medicine*. In later studies conducted in Pittsburgh, Cohen replicated this work, identified a biological pathway that may link stress to disease susceptibility, and extended the work to examine the role of social networks, social dispositions, positive affect, and most recently childhood socioeconomic status in disease susceptibility. This was done with the collaboration of colleagues in the medical community including Bruce Rabin, Bill Doyle, and David Skoner.

Cohen's interest in the interaction of psychological factors and immune responses was also expressed in a series of review articles and laboratory and field studies. The research included collaborations with Stephen Manuck, Bruce Rabin, and graduate students Anna Marsland and Elizabeth Bachen on studies of acute stress and immunity; with Jay Kaplan on chronic stress in a nonhuman primate model; and with graduate students Ian Brissette, Natalie Hamrick, and Sarah Pressman and postdoctoral students Gregory Miller, Deborah Polk, Tracey Herbert, and Mario Rodriguez on a range of questions about how psychological factors might influence immunity and immune-related diseases. With the support of the Fetzer Institute, it also included research on the role of psychosocial factors in asthma with Harvard physicians Rosalind Wright and Diane Gold.

Cohen has also studied psychosocial influences on reporting of symptoms and disease. He wrote a theoretical treatise on this topic with then-graduate student Gail Williamson and conducted a series of studies, including one with postdoc Pamela Feldman demonstrating that psychological factors predict reports of symptoms and illness independent of objective measures of underlying disease.

Finally, Cohen has had a special opportunity over the last nine years to participate as a member of the MacArthur Foundation's Network on Socioeconomic Status and Health. Network members are a unique multidisciplinary group who are willing to stretch their intellects to open themselves to the perspectives of other disciplines. They have had an enormous impact on the quality of his career and his work.

In sum, Cohen has contributed theoretical models and rigorously designed experimental and field studies addressing how the social and psychological environments influ-

ence health and well-being. His contributions have covered a range of outcomes of both theoretical and practical importance, including reading skills; depression; psychological distress; smoking cessation; hormonal, immune, and cardiovascular response; and physical diseases including asthma, cancer, and respiratory infections.

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