

## RETROSPECTIVE

# Thomas Crombie Schelling (1921-2016)

A pioneering game theorist who made the world a safer place

By **Richard Zeckhauser**

**T**homas Schelling, the distinguished economist, died on 13 December 2016 at his home in Bethesda, Maryland. He was 95 years old. Schelling applied his prolific work in game theory to arms control and deterrence, negotiation strategy, and most recently, global warming. His strategic insights made the world a much safer place.

Schelling was born and raised in California, the son of a naval officer and a school teacher. He graduated from the University of California, Berkeley in 1944 and earned his Ph.D. in economics from Harvard University in 1951. As a young economist, he served first overseas with the Marshall Plan and then in Truman's White House. After a brief sojourn at Yale University, he returned to Harvard as an economics professor in 1958, where he spent decades exploring game theory concepts such as focal points (the solution that seems natural to two parties who seek to cooperate without communication), tacit (unspoken) communication more generally, and the enormous gains that cooperation with one's enemy can produce. In 1990, he joined the University of Maryland School of Public Policy, where he continued to research and to teach until he retired in 2003.

In 2005, the Nobel Committee awarded the Memorial Prize in Economic Sciences to Schelling and Robert Aumann, noting the "great relevance [of their game theory work] for conflict resolution and efforts to avoid war." Surely Schelling's greatest contribution to the world was providing both conceptual and practical recommendations that reduced, over many decades, the likelihood of nuclear war between the United States and the Soviet Union, and subsequently Russia. His work also shaped his field. Mathematical game theorist and Nobel laureate Roger Myerson observed in a 2009 article in the *Journal of Economic Literature* that "the development of general models in game theory after 1960 was decisively influenced by Schelling's *Strategy of Conflict*," a book Myerson labeled "one of the most im-

portant and influential books in the history of social science."

Schelling investigated the world around him at a large scale, with his decades-long efforts to avert nuclear war and to curb climate change, and at a small scale, with his analyses of the often counterproductive behaviors of individuals and groups. His prime area of interest was the interactions between parties. Whether his subject was a parent coaxing better behavior from a child, or the forces that produced greater segregation in neighborhoods and high school lunchrooms than most participants desired, or nations trying to eliminate mutually destructive activities (such as the profligate dumping of greenhouse gases), his goals remained the same. Schelling worked to understand a phe-



nomenon at a fundamental level, to find ways to ensure better outcomes, and to generalize the findings to a broad array of contexts. Paul Samuelson, a fellow economist and Nobel laureate, once remarked that Schelling "couldn't help having original ideas." His mind nimbly stepped from observation to detection, reflection, and simplification. His analyses invariably ended with generalization to other areas, often illuminating critical policy issues. All was presented in memorable prose.

Schelling's scholarship yielded piercing insights. For instance, parent-child interactions revealed a hidden truth: The key ingredient of a parent's effective threat or promise was to lower one of his or her own payoffs (e.g., by increasing embarrassment should he or she not keep a promise), usually by making a verbal commitment. That would make it worthwhile for the parent to take a previously less attractive action and fulfill an otherwise costly promise when

the child complied. Schelling analyzed the parent's need to carry out a threat, because failure to do so would embarrass the parent in the short term and would sap his or her credibility in the long term. Although humans have always made threats and promises, Schelling revealed those tactics' concealed underpinnings. He then parlayed this insight into a discussion of its policy import in numerous other contexts, such as threat credibility in international relations.

At Harvard, Schelling gained recognition as a professor unique in both subject matter and style of thinking, as illustrated in his books. He was a gifted teacher in the classroom and the seminar room, at Harvard and subsequently at the University of Maryland, and to the world through his engaging yet accessible writings. He inspired his students to grapple with the world and to think creatively. Many who came to know him were equally inspired by his remarkable generosity. For example, he often returned students' and colleagues' papers with several pages of helpful, single-spaced comments. As his student, undergraduate and graduate, then long-term colleague and lifetime friend, I benefited often from his generous wisdom.

Schelling's colleagues knew that they should wait until the end of a seminar for the climactic event when he would finally speak. His encouraging smile would be followed by perfect remarks, kind yet penetrating. Schelling's analysis often related the analyzed phenomenon to an everyday situation which, he showed, had parallels to critical international and domestic policy issues and whose outcomes, he demonstrated, could be improved by attention to some aspect of the presenter's analysis. The presenter, though dazzled by the on-the-spot brilliance of this response, would be enriched by an enhanced conceptual model, important illustrations, and useful policy prescriptions.

Although retired, Schelling continued his work until his death. He leaves behind two papers on climate change that he was preparing for publication. His passion, eloquence, and generosity will always be remembered by his colleagues, family, and friends. Millions more may have him and his work to thank for having been spared a nuclear cataclysm. ■

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