

## WATCHPAD

### Salute to Schelling: Keeping It Human

DANIEL B. KLEIN, TYLER COWEN, AND TIMUR KURAN\*

THOMAS SCHELLING HAS BEEN ONE OF THE, AND IN MANY CASES *the*, pioneer in developing the following ideas: coordination concepts, focal points, convention, commitments (including promises and threats) as strategic tactics, the idea that strategic strength may lie in weaknesses and limitations, brinkmanship as the strategic manipulation of risk, speech as a strategic device, tipping points and critical mass, path-dependence and lock-in of suboptimal conventions, self-fulfilling prophecy, repeated interaction and reputation as a basis for cooperation, the multiple self, and self-commitment as a strategic tactic in the contest for self-control.

Schelling's most noted works are *The Strategy of Conflict* (1960), *Arms and Influence* (1966), *Micromotives and Macrobehavior* (1977), and *Choice and Consequence* (1984).

When Thomas Schelling became a Distinguished Fellow of the American Economic Association, the *Journal of Economic Perspectives* published a splendid tribute to him written by Richard Zeckhauser (1989). Zeckhauser captured Schelling's remarkable quality of developing important insights while eschewing attempts to bottle them as formalized ideas.

---

\* Klein: Department of Economics, Santa Clara University; Cowen: Department of Economics, George Mason University; Kuran: Department of Economics and School of Law, University of Southern California.

We are grateful to Fred DeWorken-Eley for his excellent work in completing and cleaning the data for the citations analysis.

Schelling has always displayed an absolute independence from the trend toward formalization. His career reflects the deep sense that stories should be about human beings, not mere utility functions, and that formalization, while fruitful in some respects, tends to kill key human qualities.

Zeckhauser (154) says: “Schelling’s work [contributed] fundamental game theory insights to political science, psychology, and sociology long before core economists found that conjectural equilibria and commitment difficulties were central to [economics].”

One indicator of a scholar’s impact is citation analysis. The Institute for Scientific Information (ISI), now a unit of the Thomson Corporation, compiles citation information in several selective databases. ISI also publishes a website called “Highly Cited”, which tabulates and ranks researchers by citations (ISIHighlyCited.com). Unfortunately, that service is based on citations to articles in certain journals since 1981. Citations to Schelling are mainly to his book, and “Highly Cited” does not include Schelling at all. Therefore, we contacted Thomson Scientific-ISI and purchased the complete raw citation information needed to make a relevant comparison, and carefully cleaned the data.<sup>1</sup> Table 1 shows the total citations<sup>2</sup> of Schelling and of four other economists, who have been awarded the Nobel Prize in economics. By this metric, Schelling’s ideas seem to have had extraordinary impact. One reason we write this piece is to express publicly our admiration for Schelling. Another is to assemble this evidence of Schelling’s influence and make sure it is not overlooked in further deliberations about awards that help to express and define the character of professional economics.

---

<sup>1</sup> There are a number of problems in ISI’s data methods, but the problems do not undermine the results presented here. For example, articles in indexed journals with footnote references, such as law review articles, generate a citation to a work every time that work is footnoted in the same article, giving a huge advantage to works discussed in law reviews. Other biases and problems have been discussed.

<sup>2</sup> The citation data was purchased from Thomson Scientific (ISI) in October 2004. The databases covered were the Social Science Citation Index (1956 to Oct. 2004), Arts & Humanities Citation Index (1975 to Oct. 2004), and the Science Citation Index Expanded (1945 to Oct. 2004). A citation is counted once, even when its journal is indexed in two databases; there is no duplication. For further information on the citation count, see the [Excel file](#) containing the spreadsheet and explanations.

**Table 1: Total citations of five economists**

Author Name	Total cites	Total cites weighted for coauthorship
T. Schelling	6767	6668
J. Harsanyi	5315	4988
G. Akerlof	4915	3935
R. Selten	2548	2348
A.M. Spence	2286	2276

### KEEPING IT HUMAN

Zeckhauser (154) notes that long before conjectural tools became part of the microtheorist's tool kit, Schelling showed the importance of "if he thinks that I think" reasoning. During the second half of the 20th century, economists made a discipline that seemed to strive for determinant systems of economic relationships, based on initial conditions of endowments, technologies, and preferences. In dealing with the "he thinks that I think" nature of social affairs, the formalists have generally had to go to the length of assuming closed systems known as common knowledge. Equilibrium model-building by and large depends on the common-knowledge assumption or some approximation to it (Friedman 1986, 11; Rasmussen 1989, 51; Binmore 1992, 150). But the common-knowledge assumption does not suit the flavor of Schelling's thought, because people tend to generate disjoint or asymmetric interpretations of affairs, and to transcend and complicate whatever they think others think they think of a situation. Schelling captured this transcendent human quality in passages like this one.

*Taking a hint* is fundamentally different from deciphering a formal communication or solving a mathematical problem; it involves discovering a message that has been planted within a context by someone who thinks he shares with the recipient certain impressions or associations. One cannot, without empirical evidence, deduce what understandings can be perceived in a nonzero-sum game

of maneuver any more than one can prove, by purely formal deduction, that a particular joke is bound to be funny. (Schelling 1960, 163-64)

Agents in equilibrium models never laugh at jokes. Humor depends on asymmetric interpretation, which is something that common-knowledge assumptions preclude.

Schelling believes that understanding the interplay of interpretations and expectations necessarily involves human context and empirical referents: “An analyst can deduce the decisions of a single rational mind if he knows the criteria that govern the decisions; but he cannot infer by purely formal analysis what can pass between two centers of consciousness” (163). Zeckhauser captures Schelling’s commitment to the human element.

Many mathematical game theorists, who are likely to focus on the formal properties of payoff matrices, would not accept the need for empiricism. When confronted with one of Schelling’s problems, say to choose among multiple equilibria in a non-zero-sum game, they might propose an axiomatic method. Schelling would have no objection—he takes all the help he can get—but he would probably observe that for most players a mathematically irrelevant feature that nevertheless conveys a tacit signal is likely to prove more reliable. Schelling, in essence, plays his games in a world that is richer than most game theory analyses. He acknowledges that players may choose ‘dominated’ strategies not only to create reputations, but to adhere to ethics, build self-respect, or reflect generosity. To say that Schelling is merely exploring metagames, while perhaps technically correct, seems to miss the richness. (Zeckhauser 1989: 158-59)

Schelling seems to say that being human is an open-ended process, and our theories should be populated by these open-ended creatures. No machine or mathematical function can, by itself, approximate the human being.

Moreover, Schelling shows a commitment to social science as a part of the public culture, and consequently recognizes that the analyst may well be a factor in the game. An important theory may influence social affairs, thereby altering the situation and retiring its applicability.

These tendencies have made Schelling a unique and independent figure in the social sciences. His writings have taught us many crucial insights, and his example has edified and inspired us. For all that we are grateful.

#### REFERENCES

- Binmore, Ken.** 1992. *Fun and Games: A Text on Game Theory*. Lexington, MA: D. C. Heath and Co.
- Friedman, James W.** 1986. *Game Theory with Applications to Economics*. NY: Oxford University Press.
- Schelling, Thomas C.** 1960. *The Strategy of Conflict*. Cambridge: Harvard University Press.
- Schelling, Thomas C.** 1966. *Arms and Influence*. New Haven: Yale University Press.
- Schelling, Thomas C.** 1978. *Micromotives and Macrobehavior*. New York: Norton.
- Schelling, Thomas C.** 1984. *Choice and Consequence: Perspectives of an Errant Economist*. Cambridge: Harvard University Press.
- Rasmusen, Eric.** 1989. *Games and Information: An Introduction to Game Theory*. New York: Basil Blackwell, 1989.
- Zeckhauser, Richard.** 1989. Distinguished Fellow: Reflections on Thomas Schelling. *Journal of Economic Perspectives*. 3(2): 153-164.

### **ABOUT THE AUTHORS**

**Daniel Klein** is associate professor of economics at Santa Clara University.

**Tyler Cowen** is professor of economics at George Mason University.

**Timur Kuran** is professor of economics and law and King Faisal Professor of Islamic Thought and Culture at University of Southern California.