

Thomas Schelling

Editor's Note: This is an abbreviated version of RF's conversation with Thomas Schelling. For the full interview, go to our Web site: www.richmondfed.org.

Thomas Schelling's early research was common fare for economists in the 1950s. The quality of the work may have been higher than most, but the topics were relatively mundane. His first two books were titled simply *National Income Behavior* and *International Economics*. But his interests extended beyond the traditional confines of the discipline, a point that was made clear with the publication of *The Strategy of Conflict* in 1960. In it, he used the tools of economics to illuminate important issues in international relations, while making significant contributions to game theory and laying the groundwork for later research in experimental economics.

Schelling has continued to publish on military strategy and arms control throughout his career, but his work has led him to a number of other seemingly disparate issues, such as racial segregation, organized crime, and environmental policy. In each case, he has been able to generate original insights from ordinary observation. As his longtime colleague Richard Zeckhauser has written, Schelling "thinks about the essence of phenomena. In scanning everyday behavior, he sees patterns and paradoxes that others overlook."

Schelling spent most of his career at Harvard University, before joining the faculty of the University of Maryland in 1990. He is a past president of the American Economic Association and recently worked with other distinguished economists on the Copenhagen Consensus, a project designed to prioritize the largest social problems facing the world. Aaron Steelman interviewed Schelling at his home in Bethesda, Md., on February 7, 2005.

RF: Your early work focused on topics that were fairly conventional. How did your work progress into areas, such as strategic bargaining, that largely had been beyond the scope of economists?

Schelling: In 1948, I had just finished my coursework for the Ph.D. at Harvard, and a friend of mine called from Washington. He was working on the Marshall Plan and said that he had an opportunity to go to Paris but he couldn't leave until he had a replacement. So he asked me if I would like to replace him. I said sure.

Eventually, I went to Europe as part of this assignment and worked mainly on negotiations for the European Payments Union. Then, Averell Harriman, who had been head of the Paris office, went to the White House to be President Truman's foreign policy advisor. Harriman asked my boss to go with him, who in turn asked me a few months later to join him. In 1951, the foreign aid program was shifted to the Mutual Security Program, with Harriman as director, in the Executive Office of the President. I moved there, and stayed through the first nine months of the Eisenhower administration. So when I left, I had spent five years in the foreign aid bureaus, largely working on negotiations. That, I believe, was what focused my attention on the type of issues that showed up in *The Strategy of Conflict*.

RF: One of the more famous bargaining situations that you propose in *The Strategy of Conflict* involves a problem in which communication is incomplete or impossible — the game where two strangers are told to meet in New York City but have not communicated with each other about the meeting place. What does this game tell us about bargaining? And what, if any, are the policy implications?

Schelling: That little exercise, which I designed to determine if people could coordinate without any communication, became fairly famous and now I am usually identified as the originator of the idea of "focal points." My argument was that in overt negotiations something is required to get people to arrive at a common expectation of an outcome. And the ability to reach such a conclusion without communication suggested to me that there was a psychological phenomenon, even in explicit negotiations, which may work to focus bargainers eventually on that commonly expected outcome. By understanding that, I thought, we may be able to more easily facilitate policy negotiations over such matters as what would be an appropriate division of the spoils, an appropriate division of labor, and so forth.

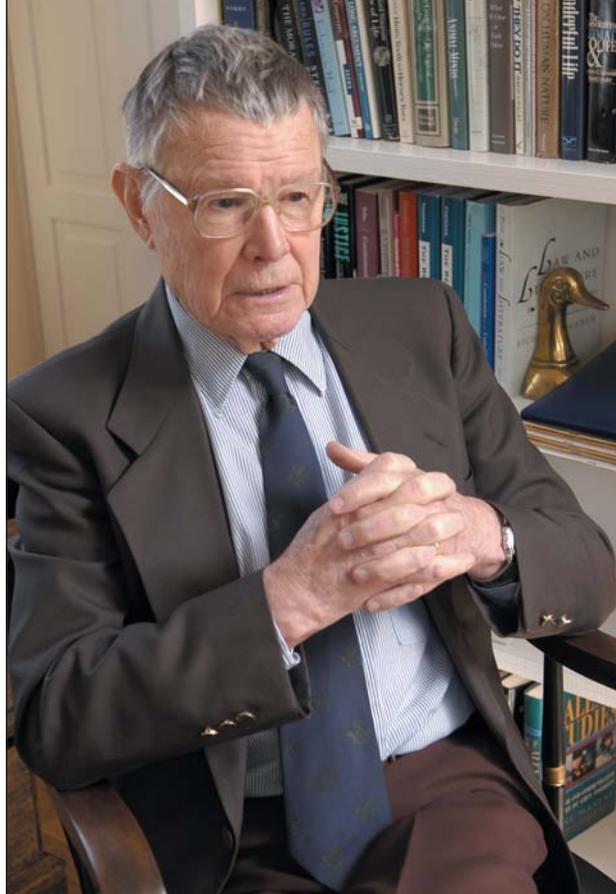
RF: What were the responses when you originally posed this question to people?

Schelling: When I first asked that question, way back in the 1950s, I was teaching at Yale. A lot of the people to whom I sent the questionnaire were students, and a large share of them responded: under the clock at the information desk at Grand Central Station. That was because in the 1950s most of the male students in New England were at men's colleges and most of the female students were at women's colleges. So if you had a date, you needed a place to meet, and instead of meeting in, say, New Haven, you would meet in New York. And, of course, all trains went to Grand Central Station, so you would meet at the information desk. Now when I try it on students, they almost never give that response.

Some cities have more obvious focal points than others. For instance, if I asked people where would you meet in Paris, they probably would have no trouble. Most would go to the Eiffel Tower. But in other cities, it's not so clear.

The question first occurred to me while I was driving across country with two college friends. We were going from San Diego to New Hampshire and back, and camping along the way. We stopped in San Antonio and one of the other two guys got out and bought some peanut butter and crackers. While he was gone, a police officer made me move on, and because of the one-way streets, it took me about 10 minutes to get back to where I dropped him off, and he wasn't there. I kept circling around and eventually we found each other. But we realized that this could happen to us in any city, and we should come up with a plan about how to meet if we got separated.

We spent the whole afternoon thinking about it individually, but not talking about it, and that evening around the campfire we compared notes. We all wound up in the same place. The criteria we used were the following: Every city had to have this place and there could be only one of it, you had to be able to find it by asking any police officer or fireman, and you had to be able to reach it by public trans-



portation. That narrowed the list down to the town hall or the main police station or the main post office.

Well, before we left home, we had each given our mothers a list of cities in which we would look for mail, and the way you get mail when you are traveling across country is to have the letter sent to your name, care of general delivery, and it arrives at the main post office in that city. That occurred to all three of us, and if we had to choose among the places that shared the criteria we described, the main post office seemed to be the obvious choice.

RF: You begin many of your papers with examples that are taken from everyday

life. For instance, in "Hockey Helmets, Daylight Saving, and Other Binary Choices," you use the case of a player for the Boston Bruins who suffered a severe head injury to demonstrate why some collective action problems can be so difficult to solve — in this case, getting

hockey players to voluntarily wear helmets. Is this a conscious strategy of yours to engage readers in what otherwise might seem like an abstract discussion?

Schelling: I always try to find something that I can put in the first paragraph to make the article sound interesting. It was just a coincidence that the hockey player had been hit in the head and that

I had noticed it. It was a good example of a scenario in which everyone might wish to be compelled to do something that they wouldn't do on their own individually. So I think that has been part of my style. I wrote a textbook in international economics that had about a dozen policy chapters. I tried to have the first page of every chapter present an interesting puzzle or phenomenon that would get the interest of the readers.

RF: You have written that the "ordinary human being is sometimes ... not a single rational individual. Some of us for some decisions are more like a small collectivity than like the textbook consumer." Could you explain what you mean by this, perhaps through a few examples?

I consider myself in the rational-choice school, absolutely. But I am more interested in the exceptions than many other economists.

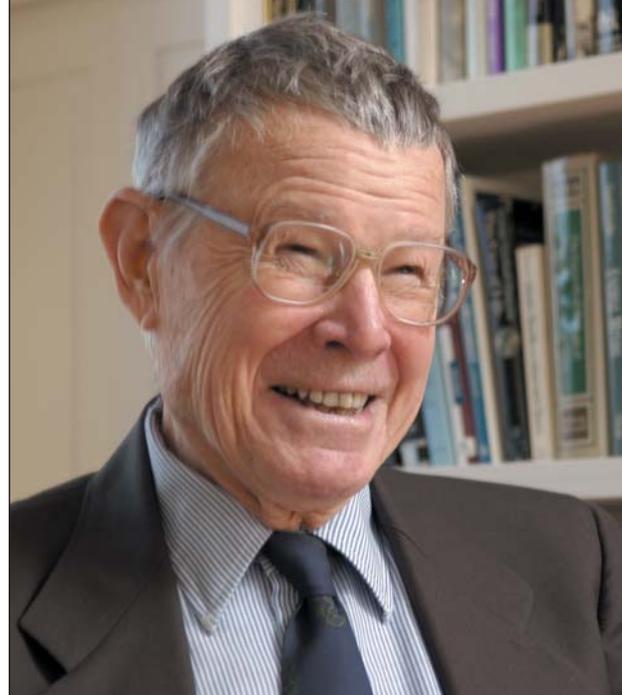
Schelling: I started working on that subject in the 1970s when I was asked to join a committee of the National Academy of Sciences on substance abuse and habitual behavior. I was the only economist there. Everyone else was a specialist on a certain type of addictive substance such as heroin or some other health problem like obesity. It seemed to be taken for granted that if you were addicted — whether to heroin or alcohol or nicotine — there wasn't much you could do for yourself. I argued that this was not the case, and gave a number of examples of ways people can help themselves avoid relapse.

For instance, one person tried to show how addictive heroin was by pointing out that many former users, even those who had avoided heroin for a long time, would be likely to use the drug again if they were to hang out with the people they used to shoot up with or even if they listened to the same music that they played when they used heroin in the past. I pointed out that there was some instructive material right there. Don't associate with the same people. Don't listen to the same music. And if the place where you used to use heroin is on your way to work, find a different route. So even though those people may be inclined to use heroin again, there were clearly some ways in which they could help prevent themselves from having a relapse.

The more I thought about this issue, the more I began to conclude that a lot of people have something like two selves — one that desperately wants to drink and one that desperately wants to stay sober because drinking is ruining his life and his family. It's as if those people have two different core value systems. Usually only one is prominent at a given time, and people may try to make sure that the right value system attains permanence by taking precautions that will avoid stimulating the other value system.

RF: Some have called you a “dissenter” from mainstream economics. But it seems to me that this is true only insofar as it concerns topics of inquiry. On methodological issues, you don't seem as willing to abandon some of the core assumptions of neoclassical economics as, say, those people who call themselves “behavioral economists.” Do you think that this is a fair characterization?

Schelling: This is something that I talk about a lot. I claim that we couldn't do without rational choice. But we don't expect rational choice from a child or an Alzheimer's patient or someone suffering from shock. We will better understand the uses and limits of rational choice if we better understand those exceptions. I use the example of the magnetic compass. It's usually a wonderful way to determine which direction north is. But if you are anywhere near the actual north magnetic pole, the compass could point in any direction, even south. The same is true with rational choice. It is a wonderful tool if used when appropriate, but it may not work all the time. So I consider myself in the rational-choice school, absolutely. But I am more interested in the exceptions than many other economists tend to be.



As for the behavioralist critique of neoclassical economics, I would conjecture that if you walked into a classroom where a behavioralist is teaching microeconomics, that person would teach it in a straight, standard fashion. It's something that you have to master — you can't do without it. For instance, if a student were to ask about the effect of a gasoline tax on driving behavior, the response would likely be that such a tax will tend to lower consumption of gasoline and/or increase the desirability of more fuel efficient cars. That's just straight neoclassical economics.

More generally, I think that when a new idea develops, it is important that the enthusiasts are given free rein to explore and perhaps even exaggerate that idea. Once it catches on and becomes respectable, then it's time to become more critical. Rational choice has gone through that process, and the behavioralists have emerged to challenge some of its assumptions. The behavioralists have probably overstated their case, but their ideas are relatively new and will be critiqued as well.

I think that people like Dick Thaler and Bob Frank, who are clearly two of the most innovative behavioralist economists today, so much enjoy what they do that I'm not sure if they consciously exaggerate the role of these exceptional situations. When I read Bob Frank, I get the sense that he is passionate, almost emotional about his belief that American consumers are suffering welfare losses because they are spending their money trying to avoid the discomfort of not being equal to their neighbors. I think he overdoes it, and I think that I have told him so. I don't know if his answer today would be, “Of course I overdo it. I'm trying to get attention paid to something I think is important.” Or if he would say instead, “No, I don't overdo it. I really do believe that the phenomenon is that important.” But even if the former is true, I would excuse that. I think that the point is important enough that if exaggeration will help them get it across, let them exaggerate.

RF: What is your opinion of modern game theory?

Schelling: That's a hard one, because I don't keep up with all the latest work in that field. But I would like to make the fol-

lowing broad claims: Economists who know some game theory are much better equipped to handle a lot of important questions than those who don't. But economists who are game theorists tend to be more interested in the mathematics aspect of the discipline than the social sciences aspect. Some economists of the latter group are good at using their theoretical work to examine policy issues. Still, many — and I think this is especially true of young game theorists — tend to think that what will make them famous is their mathematical sophistication, and integrating game theory with behavioral observations somehow will detract from the rigor of their work.

I'll give you an example. I had a student at Harvard named Michael Spence, who a few years ago won the Nobel Prize. Mike wrote a fascinating dissertation about market incentives to engage in excessive competitive expenditure. I was on his committee, and I argued that he needed to do two things. First, summarize the theory in 40 pages. Second, find six to 10 realistic examples to illustrate how the theory worked and why it mattered. He spent much of a year doing that. But in the end, he published the 40-page version of his dissertation in a top-tier journal, and used that paper as the first chapter of a book. Both of them got a lot of attention, and led to his appointment to the Harvard faculty.

The reason that I advised him to take this approach was quite simple: If he didn't, other people would and they would get credit for his work because they were able to apply it to real-world questions. I think that other economists, especially young game theorists, can learn from this example. Even very technical work often can be used in an applied manner — and this can benefit the work as well as the economist.

RF: In 1950, few people would have predicted, I think, that the Cold War would end as peacefully as it did. For example, it is surely notable that the conflict ended without the use of nuclear weapons. Why do you think both sides avoided using means that would have had fairly certain, but catastrophic, consequences?

Schelling: I have written and lectured about this quite a bit. When I give a talk on the subject, I begin by stating, "The most important event of the second half of the 20th centu-

Thomas Schelling

► Present Position

Distinguished University Professor, Department of Economics and School of Public Affairs, University of Maryland

► Previous Faculty Appointments

Harvard University (1958-1990) and Yale University (1953-1958)

► Government Experience

The White House and Executive Office of the President (1951-1953); Economic Cooperation Administration in Europe (1948-1950); U.S. Bureau of the Budget (1945-1946)

► Education

A.B., University of California at Berkeley (1944); Ph.D., Harvard University (1951)

► Selected Publications

Author or co-author of several books, including *The Strategy of Conflict* (1960); *Micromotives and Macrobehavior* (1978); and *Choice and Consequence* (1984)

► Awards and Offices

Fellow, American Academy of Arts and Sciences; Member, National Academy of Sciences; Past President of the American Economic Association and Eastern Economic Association

ry is one that didn't happen." I think you have to go through the history to understand it fully. In the early 1950s, it was believed that the likelihood of the United States using nuclear weapons was so great that the Prime Minister of Great Britain came to Washington with the express purpose of persuading the Truman administration not to use them. And because the British had been partners in the development of nuclear weapons, their Parliament thought that the Prime Minister had a good right to share in any decision about how they would be used.

As we know, they were not used, but the Eisenhower administration repeatedly asserted that nuclear weapons were just like any other type of weapon, and that they could be used as such. The attitude in the Kennedy and Johnson administrations was quite different. They believed that nuclear weapons were fundamentally different, and their statements helped to build the consensus that their use was taboo — a consensus that may have dissuaded Nixon from using them in Vietnam.

Also, in the 1960s there was a great fear that dozens of countries would come to possess nuclear weapons. But the nonproliferation efforts were vastly more successful than most people expected. It was thought that Germany was bound to demand them, and that the Japanese couldn't afford to be without them. And then it would spiral down to other countries: the Spanish, the Italians, the Swedes, the South Africans, the Brazilians would all have nuclear weapons. The process by which these countries would acquire them, it was thought, was through nuclear electric power — the reactors would produce enough plutonium to yield weapons. For several reasons, that didn't occur.

Israel's restraint in the 1973 war was also very important, I think. Everyone knew that Golda Meir had nuclear weapons, and she had perfect military targets — two Egyptian armies north of the Suez Canal, with no civilians anywhere near. But she didn't use them. Why? Well, you could say, quite reasonably, that they didn't want to suffer worldwide opprobrium. I think, though, that there was probably another reason. She knew that if she did, the Iranians, the Syrians, and other enemies of Israel would likely acquire them and would not be reluctant to use them. In addition, it was not clear in the late 1970s that the Soviets

shared the nuclear taboo. Yet, they didn't use them in their war against Afghanistan — and this was also very important.

There is a possibility that nuclear weapons will be used in the India-Pakistan dispute. But I'm not especially worried about that. The Indians and the Pakistanis have been involved in nuclear strategic discussions in the West for decades. They have had a long time to think about this, and have watched the U.S.-Soviet negotiations. I think they know that if they were to use nuclear weapons it could easily lead to something beyond their control. So I think that by now the taboo is so firmly entrenched, that it is very unlikely we will see nation-states use nuclear weapons. What we don't know is if that taboo holds for non-state actors. I think that it might, but I don't hold that opinion with much conviction.

RF: Some policymakers and analysts have argued that diplomacy is much more difficult in today's world than it was during the Cold War because there are now multiple non-state players who seem to place less value on stability than the Soviets did. How does this change the bargaining game? How can economics inform the current conflict with Islamic terrorists?

Schelling: One big difference is that you simply don't know who the non-state actors are. We have made a big deal out of Osama bin Laden. But we don't know if he is alive, and if he is alive, whether he still controls the money and organization in the way that he did a few years ago. Also, there are no recognized private channels of communication with non-state actors. If you want to get a message to bin Laden, you either hold a press conference and hope that he will hear it, or send it to him through a secret private channel.

Also, there is a popular notion that deterrence will not work when you are dealing with non-state actors. But I'm not so sure that this is the case. Consider the Taliban. I think that if the leaders of the Taliban had known what type of response the attacks of Sept. 11 would produce from the United States, they would have tried to prevent the attacks. So I think that we should consider what we can do to alienate bin Laden from some of his supporters. You also need to consider what types of weapons they are likely to use and what types of targets they are likely to choose. And we need to determine their objectives.

For instance, we still don't know what the objectives were of the attacks on the World Trade Center, because the effects were so widespread. It killed a lot of people. It produced the largest media coverage of a terrorist attack in history. It demonstrated U.S. vulnerability, while also destroying a symbol of Western capitalism. And it demonstrated the competence and some would say the bravery of the

terrorists who were willing to sacrifice themselves. Each of those could have been the principal objective, or there could have been some combination of objectives. But we don't know for sure.

When we think about weapons, many people seem to think that terrorists will use whatever weapon they can get their hands on. But consider the use of, say, smallpox from a cost-benefit analysis. They could release smallpox in New York, Chicago, and San Francisco. But smallpox is a very difficult disease to contain in a world of global travel, and the United States is the country best equipped to deal with an outbreak. Releasing smallpox in the United States, then, could result in many more deaths in poor countries with relatively bad health systems like Indonesia and Pakistan than in the United States. I'm not sure that would be a result the terrorists would welcome. By unleashing such widespread death in the developing world — especially in places where they enjoy support today — they could substantially reduce their approval and assistance from people who are now

their allies. In contrast, anthrax might be a more attractive option because it is not contagious, and its effects could be limited to the United States.

Also, there may be a cultural aspect to this. If releasing a non-contagious toxin in, say, a subway station is considered by large parts of Islamic culture to be a cowardly way to attack your enemy, then this

could be costly to them. It could damage their support in the same way that releasing a contagious toxin could, even though the effects of the actual attack would be much more direct and localized.

RF: I would like to talk about your famous checkerboard example as it applies to racial segregation. You have written, "A moderate urge to avoid small-minority status may cause a nearly integrated pattern to unravel, and highly segregated neighborhoods to form." Could you describe how this process unfolds?

Schelling: When I started thinking about this question, many American neighborhoods were either mostly white or mostly black. One possible explanation for this, of course, was rampant racism. But I was curious about how this might emerge in a world where racism was not particularly acute, where in fact people might prefer racial diversity.

The process works basically like this. Let's say the racial composition of a neighborhood is 55 percent white and 45 percent black, and that the majority population in the surrounding areas is utterly without prejudice. Then you may get a case where more and more members of the majority group move in. This may be fine with the minority group for a while. They may not mind going from being 45 percent of the population to 35 percent. But at some point — say, when their

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part of the population is only 20 percent — then the most sensitive members of that group will probably evacuate, reducing their percentage even further. The result is a highly segregated neighborhood, even though this wasn't the intent of the majority population.

I wanted to come up with an easily understandable mechanism to explain this phenomenon that I could use in teaching a class. I spent several summers at the RAND Corporation, which had a good library. I looked at several sociological journals, trying to find something I could use, but I wasn't able to find anything suitable. So I decided I would have to do something myself.

One day, I was flying home from somewhere and had nothing to read. So I passed the time by putting little "X"s and "O"s in a line, with one group representing whites and the other representing blacks, and used the assumption that there was a moderate desire to avoid becoming part of a very small minority group. Well, it turned out that this exercise was very hard to do on paper, because you had to keep erasing and starting over.

But my son had a coin collection at the time, and he had a bunch of copper coins and a bunch of zinc coins. I laid them out, and then I decided that putting them in a line wasn't good enough. You needed more dimensions. So I arranged them on a checkerboard. I got my 12-year-old son to sit down at the coffee table with me, and we would move things around. Soon, we got quite used to how it worked and how different the results were if one group was more discriminating than the other or if one group was more numerous than the other.

I published my results, and it got quite a bit of attention at the time. But it wasn't until 25 years later that I realized that this game had pioneered some of the work in what is called "agent-based modeling" and which is used in a variety of disciplines in the social sciences. At the time I was working out this example I didn't realize that I was engaged in an area of research that would one day have a formal name.

RF: How did you become involved with the Copenhagen Consensus and what type of policy proposals has the group offered?

Schelling: I don't know precisely why I was chosen. Bjorn Lomborg, the organizer of the project, wanted to gather a group of economists of some reputation, and he probably knew that I had written about the greenhouse gas issue. So that was probably the connection.

When the project started we had a United Nations list of global problems related mostly to development and poverty. We were asked to look over that list and pick 10 that we thought would be worth pursuing. We did that, and then we asked a very distinguished person in that field to write a major paper on the issue, along with two other people to write critiques of the paper.

Somewhere along the way, we began to emphasize an idea that wasn't clear to me at the outset and that I think wasn't

clear to many other people — namely, that this was mainly a budget priority exercise. We were supposed to do cost-benefit analysis. We were told that we had \$50 billion to spend, and we should decide which projects would provide the most welfare benefit for the money.

Unfortunately, that approach had not governed our choice of projects and had not governed the way the papers were written. For instance, no one really had a good idea of what you could do with some part of \$50 billion to generate more liberal trade. The same was true with education. The papers argued that unless you can reform the educational systems in the big industrialized countries, more money won't help. Similarly, it wasn't clear to us how more money would help us prevent the spread of financial crises. So we had about five topics that really did not fit, and we treated many of them as not applicable. In retrospect, I think we should have treated climate change in the same way.

Of those projects where we could see how the expenditure of money would help, restricting the spread of HIV and AIDS seemed like it should be at the top of the list. It is just so crucially important that we advocated spending about half of the money on it. Then there were some projects, like malnutrition and malaria control, where you just got so much for your money, that we put them near the top also. Projects to improve sanitation also were deemed quite worthwhile.

In general, I think that the program was successful in some ways and less successful in others. And if we had it to do all over again, I think that we could do an awful lot better.

RF: How did you come to the University of Maryland?

Schelling: In the 1980s, Congress passed a law making it illegal for most businesses to have a mandatory retirement age for most employees. But they allowed colleges and universities a seven-year grace period. Harvard, at the time, had mandatory retirement at 70, and I was going to be 70 before the grace period expired. Well, I was in good health, felt that there was more research that I wanted to do, and still enjoyed teaching. So I let it be known that I could be attracted to another university. My first preference was a university in Southern California, where I grew up. But then a former colleague and a very good friend of mine who was dean of the University of Maryland's School of Public Affairs called, and I told him about my situation. He asked me not to accept another offer until I heard from him. It also turned out that the chairman of the economics department had been my teaching fellow at Harvard in the 1960s. So I had two very close connections at Maryland, and I also knew a few other people on the faculty, like Mancur Olson. Plus, as we have discussed, much of my work is very policy-oriented, which made the Washington area pretty desirable to me. Overall, it seemed like this would be a good fit for me, so when the president of the university made me a very generous offer, I accepted it. I have been at Maryland since 1990. I still teach a class or two, but I am now in an emeritus position. **RF**