

CHAPTER 1

Introduction

Stephen M. Maurer

We have given the world our passion
We have naught for death but toys.
W. B. Yeats¹

This is a happy book.

Some readers, particularly those who knew the late Prof. Scotchmer, will immediately understand – she would have said “feel in their bones” – why this book is so unapologetically joyful. Tragedy was foreign to her nature. She was too busy living. Every few months she would stop in mid-sentence, pause for an instant, and say: “We are so lucky. We lead such privileged lives.”

She never changed her mind.

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Prof. Scotchmer would not want a sentimental book. Her work exists and always will. She would not want us to waste our time, or be distracted from pushing our subject forward.

But that is no objection here. Prof. Scotchmer’s papers have much to teach, and her work is not complete. There is nothing sentimental about wanting new readers to see her work whole, or take it further. This book is an investment in the future.

Our first purpose, then, is to introduce her work as completely as we can. This is not a textbook, and we have not paraphrased. We want readers to encounter Prof. Scotchmer’s work directly. That said, our authors have worked hard to make the process as rewarding as possible. First-time readers will be told how each article fits into the wider topic, preview the main arguments, and learn which lessons to watch for. Returning readers can compare their impressions against what our experts

1 W. B. Yeats, “Upon a Dying Lady,” *The Wild Swans at Coole* (London and New York: Macmillan, 1919). Prof. Scotchmer knew and admired the lines.

2 S. M. Maurer

have said. In both cases, we hope readers will indulge in a theorist's disciplined daydreams: linger over some short phrase and let it expand. Check Suzanne's statement against your own reasoning, look for counter-examples, invent and answer questions for yourself. More often than not, you will find a few paragraphs later that she has traveled the path already. Above all, indulge your curiosity. Most readers will come to this book knowing Prof. Scotchmer's innovation research. They will not be disappointed. But we hope they will read further to see how she deployed the economist's characteristic tools in other fields. Club theory is so very interesting.

Our second purpose is intellectual history. It is not surprising that most economists prefer pushing their subject forward to recording the past. Even so, topics like innovation theory are only invented once. Readers can be excused for wanting to know what it felt like to be part of the communities that pioneered the subject at Harvard and Berkeley and Toulouse.

Our third and final purpose is forward looking. Prof. Scotchmer never thought that the economics profession was reserved for geniuses and heroes. It is mostly for ordinary people, and that is its charm. We think that many economists will be interested to hear something about Prof. Scotchmer's work habits, or why she chose some research paths and not others. Careful readers will see how much remains to be done. Here's hoping they extend the work.

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Part I ("Threads in the Tapestry") begins with recollections of Prof. Scotchmer's characteristic style and habits of mind. Before any specific line of research, there is the primordial alchemy of how she turned the experience of living into models. One broad hint is that Prof. Scotchmer was never far from practicalities. The idea that "real life" and abstract thought could be divorced did not make sense to her, if only because thought and practical action feed each other. So we will be drawn to her personal life at times: you cannot understand her otherwise.

Parts II and III ("Cumulative Innovation" and "Law and Economics") present the principal milestones in Prof. Scotchmer's long investigation of intellectual property ("IP").² The centerpiece, inevitably, is her "Giants" paper. Most readers will already know "Giants" for having introduced the "cumulative innovation problem," i.e., the fact that many technologies build on earlier inventions. This chain is bound to break down unless IP

2 Readers may also want to consult Prof. Scotchmer's own elegant recapitulation of cumulative innovation in *Innovation and Incentives* (Cambridge, MA: MIT, 2004) as well as her magisterial surveys of innovation theory more broadly in Scotchmer (1998) and Scotchmer and Menell (2007).

Introduction

3

finds some way to allocate reward so that each inventor is able to cover her R&D costs.³ A quarter century later, that would be reason enough to remember “Giants.” But in fact the paper lays down a game-theoretic agenda for understanding how IP and antitrust doctrine divide reward. Prof. Scotchmer would spend a decade constructing this edifice, and the rest of her life examining the doctrinal reforms that lawyers need to implement it.

The next three parts remind us that Prof. Scotchmer’s passions and contributions did not stop with R&D incentives. Part IV (“Club Theory”) recounts her fundamental contributions to general equilibrium theory. Part V (“Evolutionary Game Theory”) features her work applying economic logic to the natural world and, more surprisingly, gender inequality. Part VI (“Public Policy”) addresses her various public policy papers. The diversity of these chapters is striking in a world where so many academics cling to whichever subject first yielded success. Prof. Scotchmer would have none of this. She was always restless, and when an idea caught her imagination she could not let go.

Finally, Part VII (“Living Legacy”) examines how Prof. Scotchmer’s work has influenced others. I think she would have liked this. Economics is the work of many hands. Then too, she would have wanted the book to have a forward-looking conclusion.

The book ends with a complete list of publications. Most include URLs and can be downloaded over the Web.

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Prof. Scotchmer managed her final months, like everything she did, with discipline and grace. Hardly anyone outside the family knew that she was sick. Partly that was her Scandinavian upbringing, a quiet opposition to chaos and wasted motion. But like everything she did, it was also a fully thought-out, personal choice. She didn’t need farewells. She had lived her life passionately: she knew that her friends loved her, and they, unmistakably, knew that she loved them. There was nothing unsaid, and nothing left to say.

Her mind was restless to the end. Some of these amusements were nostalgic, returning to pleasures she had known growing up. She beat all comers at Scrabble and calculated the scores impossibly faster than I could. We also did what she used to call “read-alouds,” rediscovering Robert Louis Stevenson with *Treasure Island* and then *The Wrecker*⁴ with its lovely send-up of an American business school where students bet on a fantasy stock market instead of going to class.

3 Prof. Scotchmer later generalized this into a broader class of “ideas models.” See Erkal, Maurer, and Meinhart, this volume.

4 Robert Louis Stevenson and Lloyd Osborn, *The Wrecker* (London: Cassell, 1892).

4 S. M. Maurer

On the last day Suzanne was unconscious. Our morning's read-aloud – “Mrs. Todd's Shortcut”⁵ – was a long story about a fearless woman that I had bought for her the year before. I want to believe that she heard me, and of course the nurses swear that this is true. But even then my better self imagined Suzanne watching me, her gray eyes bright with gentle incredulity, asking how I could believe such nonsense.

That afternoon I was in the room talking with a nurse and nurse's aide. None of us noticed when she slipped away. That, too, was how she wanted things.

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The usual disclaimers apply, particularly since Suzanne is no longer here to correct us. Readers will find that Prof. Scotchmer wrote with uncommon clarity and consistency. Even so, most of us know first-hand what it is to hear a coauthor exclaim in sudden exasperation, “I didn't mean that at all.” It is practically certain that we have similarly misunderstood Prof. Scotchmer's ideas in what follows, though I hope only in a few places. We think she would forgive us. She always came down on the side of trying.

Finally, I should add some notes on editing. Prof. Scotchmer often wrote with coauthors. While we will use phrases like “Prof. Scotchmer wrote ...” to describe her papers, this is only a convenient shorthand. To the contrary: one of Prof. Scotchmer's great gifts was her talent for coauthorship. This began with a favorite phrase – “coauthorship is hard” – and ended in articles so seamless that even her coauthors have trouble remembering who had contributed what. What makes this all the more remarkable is that the finished papers always end by supplying some missing piece in Prof. Scotchmer's broader research agenda.

The reprints which follow were published in different journals with different house rules. I have standardized these. More reluctantly, I have occasionally cut passages in the interests of space. When I did, my choices have almost always preserved material that shows Prof. Scotchmer's thoughts and ideas over her technical virtuosity. In the same vein, I have reluctantly suppressed the papers' various technical appendices along with the Clubs paper's “Proofs” section. Since this book is mainly addressed to economists, I have also eliminated extensive text and hundreds of lawyer-friendly footnotes from her “Reverse Engineering” paper. My hope is that the choices will help readers focus on what matters. If not, they can find the omitted sections on the Web.

There was a time when a book like this would never have called Prof. Scotchmer by her first name. Today I hardly know what to think. I have therefore left the choice to each individual contributor. For my own part, I have tried to use “Prof. Scotchmer” when speaking of her formal

5 Stephen King, *Skeleton Crew* (New York: Putnam, 1985).

Introduction

5

intellectual work, while reserving “Suzanne” for more informal and personal memories. Careful readers will see that I am inconsistent.

There are so many people who made this book possible. My special thanks to Eddie Dekel, Suzanne’s former student and lifelong colleague. He was always available for detailed and invariably solid advice and this book could never have been written without him. My thanks also to Cambridge University Press’s excellent and very patient editor Karen Maloney, along with assistant editors Kristina Deutsch and Kate Gavino. Finally, I want to extend special thanks to Prof. Scotchmer’s family – particularly Alan, Judi, and Jaycen Andersen and Roberta Hayes – along with lifelong friends Carl Brodersen and Gale and Sheryl Strohme for reviewing the manuscript and providing indispensable insights into her life. Most obviously, I thank the authors who participated in this collaboration.

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Prof. Scotchmer used to say, “In the end, all you take with you is your CV.” I used to stumble over that sentiment each time she said it, silently objecting that surely you take nothing at all. But now I understand. For Suzanne, life meant being active in the world and making it better. That could not stop with her death: her work and personal example will continue to exert an impact for decades to come. In the meantime, the great pleasure of this project has been to hear her voice. Her papers still teach, and encourage, and inspire. The crisp, precise comments seem to grow each time I read them. Now, through this book and the generosity of my coauthors, she will reach even more readers.

So she was right about that too.

This is a happy book.