INTRODUCTION TO CHAPTER

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Other than my parents, no person has played a more important role in my career than Bob Wilson. Bob's contribution began with a phone call to my home, when I was a senior at Cornell, letting me know the good news that I had been accepted into the Stanford Ph.D. program. I accepted instantly. (I now know that a period of delay in my response may have lessened Bob's fear of the Winner's Curse.) Bob's influence continues through today, and will continue through my entire career.

Shortly after arriving at the Graduate School of Business in October 1980, I quickly realized that my goal should be to perform sufficiently well in my class work that Bob would be willing to take me on as is student. I was aware of Bob's track record with Ph.D. students. It looked like a *Who's Who in Economics*: Al Roth, Paul Milgrom, Bengt Holmstrom, . . .

In my second year, I took Bob's class, Multi-person Decision Theory, for the first time. My resolve to work with Bob was strengthened. This course, together with course work with David Kreps, was the foundation of my graduate education. I ended up taking the course three times. This was possible because the course was entirely new each time. At the beginning of the term, Bob would gather the huge stack of working papers that scholars had sent him over the course of the year and select sixteen or so that he thought were most interesting. Before each class Bob would spend several hours studying the paper and then in class summarize the paper, present key proofs, and critically evaluate the modelling assumptions. It was a tremendous way for students both to learn about the latest research and get a sense of how research was done.

Toward the end of my second year, I walked into Bob's office with a list of dissertation ideas that were motivated by the papers presented in his class. One of the topics on my list was the role of time and information in bargaining. This was the topic that Bob recommended I attack first. What followed was not only a successful dissertation, but a research program that kept me busy for over ten years. Without the exposure in Bob's class to several important bargaining papers that I felt I could build on, my topic certainly would have been different and the outcome much less satisfactory.

Upon graduation in 1984, like many of Bob's students, I was in the enviable position of choosing among several top economics departments and business schools as a place to start my academic career. I settled on the Yale School of

Management. Yale had just hired Paul Milgrom, Bengt Holmstrom, and Oliver Williamson. The Yale School of Management was small and new, but from my perspective it had a rate of improvement approaching infinity. It was an easy and happy choice. In my early years at Yale, my contact with Bob was slight. I felt that he had done his work, but that now it was time for me to prove myself. (In retrospect, some of my early work would have benefited had I continued to seek Bob's advice, which I am sure he would have been happy to give!)

It was not until the late 1980s that Bob would again influence my career in an important way. He had begun a line of research, working with John Kennan, applying bargaining models with incomplete information to wage bargaining. I had received an early draft. For me, the work did two things. First, Bob's collaboration with an empiricist was a good role model for me to follow. I saw how a theorist could contribute to a research area that was largely empirical. Second, Bob sees and frames the issues in such a way as to stimulate new lines of inquiry. The Kennan-Wilson work challenged my belief that the separating equilibrium, which appeared in my dissertation, had empirical support. They presented both the separating and screening bargaining models, and argued that the screening model fit the data better, since the separating equilibrium resulted in too high a frequency of strikes. I did not agree.

As it happened, the economics department at Yale had an assistant professor, Joe Tracy, who had done extensive empirical work on union contract negotiations. However, our paths did not cross until the Kennan and Wilson paper got us talking. In examining the strike data, we quickly realized that while strikes were rare, it was common for bargaining settlements to occur well after the contract expiration. Many of these cases, we argued were disputes between union and firm, but disputes taking a different form. Looking closer, we found strong anecdotal evidence that unions frequently would put pressure on the firm while continuing to work, especially in situations where the firm was asking for a wage concession or there was a real possibility that the firm might use strike replacements in the event of a strike. When we extended the wage bargaining model to include the union's choice of threat—whether to strike or to holdout, putting pressure on the firm while continuing to work—then the separating equilibrium fit the data well with plausible assumptions about various parameters.

The result of this thinking is the paper that follows this introduction. I choose this paper, not only because it is one of my favorites, but it so clearly illustrates Bob's lasting impact in my career. Indeed, Bob's work with John Kennan stimulated a stream of theoretical and empirical research that Joe and I are still working on.

A second important paper in my career is Cramton, Gibbons, and Klemperer, "Dissolving a Partnership Efficiently," *Econometrica*, 1987. This paper was conceived and written while we were still graduate students, sharing an office in a trailer behind the business school. Bob Gibbons had gotten a call from a former Harvard classmate in 1983: "The FCC has decided to allocate spectrum licenses by lottery. Isn't there a better way?" Auctions are of course the better way, but we were interested in showing why lotteries were a bad idea, even when resale is possible. The answer came from building on work of Roger Myerson. Bob Wilson introduced me to Roger's work and I was closely studying it as part of my dissertation. We could extend Myerson's auction analysis and Myerson and Satterthwaite's bargaining analysis to a situation of trade with arbitrary initial ownership shares. The resulting paper demonstrated that the incentives to misrepresent private information are more severe the larger is the asymmetry in ownership. Bargaining between a seller and a buyer represents the most extreme ownership structure; uncertainty about whether gains from trade exist necessarily results in trading inefficiencies. In contrast, equal share partnerships can always be dissolved efficiently. The impact of ownership shares on trading incentives has been another important theme in my work.

The project had an even more important effect on my career. It stimulated my interest in auctions and market design. In 1993, I left Yale to join Larry Ausubel at Maryland's Economics Department. At the same time, the Federal Communications Commission was deciding how to auction spectrum licenses. Being in Washington, DC, it did not take me long to get involved in the FCC project. Of course, many of my close colleagues were already involved: Bob Wilson, Paul Milgrom, Preston McAfee, and John McMillan. It was (and still is) a great time to be an auction theorist. The FCC spectrum auctions provided the perfect setting for applying and developing theories, as well as a perfect setting to teach theorists about what is important in auction design. We all worked with the FCC and with companies toward making the auctions as successful as possible. The effort proved to be a huge success for the FCC, for businesses, and for consumers.

But it was also a huge success for the auction theorists involved. The activity was highly synergistic with both teaching and research. After the first large auction, we formed Market Design Inc., a group of auction experts interested in doing similar work in other countries and industries. Market Design Inc. continues to provide a happy form of collaboration among a number of auction theorists. The group has grown to nine (Susan Athey, Larry Ausubel, Jeremy Bulow, Preston McAfee, John McMillan, Motty Perry, Dan Vincent, Bob Wilson, and me). It has been a great pleasure for me to work with this group over the years, and to serve as president, since 1999.

Market Design Inc. is very much a Bob Wilson and Paul Milgrom inspired activity. Throughout his career, Bob has been a "practical theorist"—doing theory of the highest quality and yet having his ear close to the track of economic decision making.

Bob is a role model for all scientific scholars: use the power of theory to better understand the world around us. Like Nils Bohr did in theoretical physics in the 1920s, Bob has mentored many of the profession's most successful economists. The reason is simple: Bob brings out the best in scholars. For that I am forever grateful.