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OLIVER WILLIAMSON: REMINISCENSES

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I have been a student of Oliver Williamson's for over 50 years. I was first introduced to Olly's work in 1968 by Richard Nelson, who taught the first semester of the graduate course in industrial organization (IO) at Yale at that time. The course focused heavily on topics related to for-profit and not-for-profit organizations, organizational objectives and behavior, industry dynamics from an evolutionary perspective, research, development and the diffusion of innovations. We focused on papers and books by Simon, March, Cyert, Alchian, Chandler, Becker, Weber, Winter, Leibenstein, Mansfield, Marris, Baumol, Demsetz, Schelling, and Marschak. Coase's famous paper on the nature of the firm was on the reading list but, as I recall, was not given too much attention.

One of our assignments in Nelson's course was to read Cyert and March's book *A Behavior Theory of the Firm* which had been published in 1963 and featured recent work in the "Carnegie School" tradition. Chapter 9 of the book is entitled "A Model of Rational Managerial Behavior" and was written by Olly when he was a PhD student at Carnegie.[1] Olly's paper in the Cyert and March volume develops and explores a model of a firm whose managers have preferences over attributes like the size of the staff, managerial emoluments, and managerial slack. Rather than seeking to maximize the firm's profits, the managers seek to maximize a managerial utility function that includes

[1] This work is incorporated in Olly's first book. Oliver E. Williamson, *The Economics of Discretionary Behavior: Managerial Objectives in the Theory of the Firm,* Markham Publishing, Chicago 1967.

the attributes that affect their own welfare, subject to a minimum "acceptable" profit constraint, presumably defined by the threat of the management being ousted. The paper works out the comparative statics of the model and discusses its testable implications. A potential application to analyzing regulated monopoly firms is then outlined in the paper. Closely related work, also published in 1963, includes an econometric analysis of executive compensation based on "testable implications" of the theoretical model.[2]

I was already interested in studying the behavior of regulatory agencies and the effects of regulation on firm behavior and performance when I came to graduate school and I was very much taken by Olly's suggestion that regulated monopoly firms might be a fruitful focus of further work in this area. Indeed, I wrote a term paper, now lost to history, extending Olly's model to include a specification of technology and alternative regulatory constraints. So, what must have been one of Olly's first published papers got me into doing my first "research" on regulated firms. While Olly probably didn't look back at his 1963 paper as one of his more important academic contributions, it did have a big impact on me at the time.

The second semester IO course at Yale was taught by the late John McGowan. The focus of this course was antitrust policy and just as that course began Olly's influential paper "Economies as an Antitrust Defense: The Welfare Tradeoffs"[3] was published. It was received with great excitement by my fellow graduate students who had come to view much of antitrust policy and the economics that supported it as a subject in need of serious renovation. In that course, we also read Olly's paper on peak

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[2] Oliver E. Williamson, "Managerial Discretion and Business Behavior," *American Economic Review,* 53(5), December 1963, 1032-1057.

[3] Oliver E. Williamson, "Economies as an Antitrust Defense: The Welfare Tradeoffs," *American Economic Review*, December 1968, 58(1), 18-36.

load pricing an issue of regulatory policy concern at that time.[4] Olly thus became in my mind on idol who traveled both with the Carnegie crowd and also did more traditional welfare economics of policy relevance.

I believe that I first met Olly in the flesh in January 1972 when he was at Penn and I was on the job market seeking a position as an assistant professor. I had been invited to Penn to give a job market talk and Olly was my host. He was also the Chairman of the Economics Department. One of the rewarding aspects of the economics job market is the opportunity to meet a many senior economists whose work you have read as a student. The opportunity to meet Oliver Williamson and spend a considerable amount of time talking to him was certainly one of the high points of the job market for me, though not quite up there with actually getting several job offers. By 1972, Olly had begun to turn his attention to transactional analysis, the foundations of governance through markets and hierarchies, and their implications for antitrust and other public policies. While certainly heavily influenced by the Carnegie school, and applying its ideas where appropriate, as we now all know, he was developing a new framework for better understanding organizations and market institutions that drew on many fields of social science and law and reached back to long-forgotten institutional economics of the early decades of the twentieth century. Of course, at that time nobody really knew where this preliminary work was leading or how influential it would become. Talking about this new work with Olly at that time was stimulating and challenging.

Olly had an excellent reputation for taking good care of his students and the junior faculty, as I am sure people like David Teece, Scott Masten, and Pablo Spiller and many

[4]Oliver E. Williamson, "Peak Load Pricing and Optimal Capacity Under Indivisibility Constraints," *American Economic Review*, September 1966, 56(4), 810-827.

others can attest. During my entire career I have always felt that Olly treated me like he would one of his former students. He invited me to participate in seminars and conferences. It was through Olly that I came to know Jim March, Dick Cyert, and Herb Simon and many other distinguished scholars working on what were then new ways of looking at firm and organizational behavior. I suspect that he played a role in my being asked to join the editorial boards of the *Bell Journal of Economic*s and the *Journal of Law, Economics and Organization* where we worked together for several years. As a journal editor, Olly always had his eye out looking to find interesting research work outside the mainstream to bring to the attention of our readers. And he always worked hard with young scholars who had new and interesting ideas to help them to refine their work and to get it published. Olly was never shy about overriding a referee if he felt that a paper contained important new concepts or empirical results that would stimulate more interesting research, even if the paper under consideration was still not fully baked. This made working as a Co-editor a lot more fun than is typically the case these days.

Despite being only recently out of graduate school, Olly paid me the honor of asking me to read and comment on the draft manuscript of *Markets and Hierarchies.* I took this task very seriously and read every word of the manuscript with great care. It was tough going at first, but well worth the effort. And I am the unnamed colleague mentioned in the Preface to that book who alerted Olly to the barriers that readers might face in fully absorbing his deep and complex framework. In this regard, I am also grateful to Olly for helping me to retain my interest in new research on organizations, transactions costs, and contracts.

When I arrived at MIT, there was relatively little interest there in the kinds of work on organizations and institutions that was growing out of the Carnegie school and being pursued in different ways by Williamson, Nelson, Winter, March and their students. I had interests in a wide range of problems in industrial organization, law and economics and empirical microeconomics and after coming to MIT initially focused my attention on more mainstream research topics in these areas. Olly is largely responsible for keeping me in the loop on developments in transaction cost economics and related areas of research during the rest of the 1970s by sending me papers to read, inviting me to conferences, and asking me to discuss research work in these areas.

I don't think that I realized how much of Olly's *Markets and Hierarchies* and the papers that followed during the 1970s I had absorbed until I began a project with my colleague Dick Schmalensee in 1981. We decided to try to work through how one would restructure the electric power sector, historically built on vertically integrated regulated monopolies, to rely on competitive markets to generate electricity. We started this project just as the airline, trucking, and railroad industries were being deregulated and "deregulation" was all the rage. The Reagan administration was interested in deregulating everything and was talking about quickly deregulating the electricity and telecommunications sectors along the lines of airlines and trucking. Olly's work on governance arrangements, transactions costs, incomplete contracts, etc., played an important role in the way that we thought about and approached the problem of restructuring and introducing competition into electricity.[5]

By starting at the transactional level it became clear that electricity had many unusual attributes, that the structure of the vertically integrated structure of the industry

[5] Paul Joskow and Richard Schmalensee, *Markets for Power*, MIT Press, 1983.

that had evolved in response to these transactional attributes to minimize transactions costs of various kinds that would otherwise be associated market transactions, and that restructuring to create efficient competitive markets for power was a very significant challenge. On the other hand, regulated monopolies also had demonstrable inefficiencies. Accordingly, the choice between markets and hierarchies in electricity necessarily involved a comparison between alternative governance arrangements that each had both strengths and weaknesses from an economic performance perspective. Transactional analysis then provides a framework to identify and quantify the strengths and weaknesses of the alternative potential governance arrangements and to compare the alternative governance arrangements with one another.

This "comparative governance" approach to analyzing and understanding alternative institutional arrangements and public policies and the associated reliance on transactional analysis is the way I have approached problems of this nature even since. It is the approach that I learned from Olly. I am confident that the efforts to restructure the electric power and telephone industries in this country and elsewhere in the world would have proceeded much more smoothly, or at least not promised a rose garden, if this approach had been used more widely.[6] In addition, while antitrust policy has benefited greatly from Olly's comparative governance approach in general, and his work on vertical restraints and vertical integration more generally, there is still room for improvement.[7]

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[6] Paul L. Joskow, "Electricity Sector Restructuring and Competition: A Transaction Cost Perspective," The Economics of Contracts: Theories and Applications, Eric Brousseau and Jean-Michel Glachant (eds)., Cambridge University Press, 2002.

[7] Paul L. Joskow, "Transaction Cost Economics, Antitrust Rules and Remedies," Journal of Law, Economics and Organization, Volume 18, No. 1, April 2002, pp. 95-116.

People often ask how Oliver could have become such an influential economic thinker without "writing down models," and "proving theorems." I believe that there are at least three reasons.[8] First, Oliver's writings have contained profound and stimulating ideas that have gotten people to think about and better understand problems that received theory either ignored or handled unsatisfactorily. Stimulating ideas will always be influential and will lead others to try to formalize them both to reinforce the results or to raise questions about them. Second, in his writings, Oliver has always tried to identify testable implications of his theoretical work and encouraged students and colleagues to find opportunities to explore the testable implications empirically. During the 1980s a small army of young scholars went to work trying to find situations where empirical analysis of various kinds could be brought to bear to explore the validity of the testable implications Oliver identified. There has by now been an extraordinary amount of empirical research that has been stimulated by Oliver's work and many of the testable implications have been verified over and over again empirically.[9] Finally, Oliver has worked hard to sell his ideas around the world in lectures and seminars, challenging scholars who approach similar issues from different perspectives, and through the work of his many fine students, broadly defined. He is comfortable, even eager, to discuss his work with theorists who do work with good mathematical models and do prove theorems and this has significantly expanded the impact of his work.

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[8] Of course, some of Olly's earliest papers do contain and work through formal models and contain econometric analyses, but that is not the work that he is best known for.

[9] See for example, Paul L. Joskow, "Asset Specificity and the Structure of Vertical Relationships: Empirical Evidence", *Journal of Law, Economics and Organization*, Spring 1988 and Howard Shelanski and Peter Klein, "Empirical Research in Transaction Cost Economics: A Review and Assessment," *Journal of Law, Economics and Organizations,* 12(2), October 1995, 335-361

My interests are primarily empirical rather than theoretical and I was anxious to find some way to take up the challenge provided by Oliver's efforts to generate testable implications of his work. I found Oliver's 1983 paper "Credible Commitments: Using Hostages to Support Exchange,"[10] and his 1979 paper "Transaction-Cost Economics: The Governance of Contractual Relations,"[11] to be especially influential for stimulating my own subsequent empirical research on contracts. Together, these papers clearly lay out arguments for why bilateral contractual arrangements in which relationship-specific investments are required to support an efficient exchange relationship can be problematic <u>and</u> also explore why and how the parties to such relationships have an incentive, and often the ability, to structure contracts with incentives to minimize the probability of hold-ups, haggling and other contractual breakdowns. The 1983 paper in particular has a nice clear discussion of four types of asset specificity that are, in principle, possible to quantify (p.526). Indeed, it is that discussion got me thinking about doing empirical work on coal supply relationships.

I knew from other work that I had done on electricity production and fuel supply that there was a wide array of coal supply arrangements between coal mining companies and electric generating companies; everything from spot market purchases to vertical integration. The definition of "site specificity" contained in the 1983 paper seemed to match very nicely with the attributes of mine-mouth coal plants typically built near coal mines in the middle of nowhere. The discussion of physical asset specificity seemed

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[10] Oliver E. Williamson, "Credible Commitments: Using Hostages to Support Exchange," *American Economic Review*, 73(4), September 1983, 519-540.

[11] Oliver E. Williamson, "Transaction-Cost Economics: The Governance of Contractual Relations, *Journal of Law and Economics* 22, October 1979, 233-61.

potentially to relate to investments made in boilers using coal to produce steam to generate electricity to match efficiently the physical attributes of coal mined in specific locations around the country. The question, always the question, was whether it would be possible to get the data on contractual arrangements necessary to do a study that explored the how contractual and organizational decisions where affected by the importance of relationship specific investments.

At about this time, I attended a conference where I met an attorney who worked with coal companies and electric utilities on the formation of coal supply contracts. We chatted about my theories and the availability of data. He told me that actual coal supply contracts, coal prices, and related information could be obtained due to filing requirements by the SEC and the Federal Energy Regulatory Commission (FERC). He also indicated that he could put me in touch with people who maintained a library of such contracts. And that's how I started doing research on coal contracts from a transaction-cost economics perspective. I told Oliver about my project and, of course, he was quite encouraging. He ultimately asked me to submit my first paper on coal contracts, focusing on the effects of asset specificity on vertical integration, for publication in the first issue of the *Journal of Law, Economics and Organization*,[12] of which he was the co-editor. Oliver then strongly encouraged me to move the ball further to study other attributes of these contracts and to examine the effects of changing market conditions on contractual breakdowns and how the latter were treated by the courts. This led to three more papers

[12] Paul L. Joskow, "Vertical Integration and Long Term Contracts: The Case of Coal-Burning Electric Generating Plants," *Journal of Law and Economics*, 1(1), 1985.

in fairly short order.[13] Oliver provided the fundamental ideas that stimulated this work, strongly encouraged me to pursue it, and provided guidance along the way.

My admiration for Oliver's willingness to disseminate his ideas was reinforced at a conference we attended together around 2000 at a European university I will not name. The primary objective of the conference appeared to be to criticize Oliver's research and that of his fellow-travelers. At least, that's what most of the sessions seemed to focus on. Never getting visibly angry (more than I can say for myself), always courteous, Oliver absorbed the punches and punched back with great effectiveness. We had been planning to drive together to another conference in a city in Europe a few hundred miles away when this one was over and we got out of town as fast as we could the morning after the conference concluded.

To provide some incentives for the long drive that was in front of us, Oliver told us that there was a great restaurant in the city where the conference would take place. Moreover, if we drove really fast we could make it in time to have dinner before the restaurant there closed that evening. We spent the day driving through four European countries at a terrifying pace, with Oliver's wife Delores at the wheel. We arrived at our destination at about 8PM as it was getting dark. I asked Oliver where the restaurant was. He didn't know. I asked him what the name of the restaurant was. He didn't know. I asked him if he knew what kind of food the restaurant served. He didn't know. We were having a very serious contractual breakdown. We sought out a policeman, who

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[13] "Contract Duration and Relationship Specific Investments: The Case of Coal," *American Economic Review,* March 1987*;*"Price Adjustment in Long Term Contracts: The Case of Coal", *Journal of Law and Economics*, April, 1988; "The Performance of Long-Term Contracts: Further Evidence from Coal Markets", *Rand Journal of Economics*, Summer, 1990.

spoke a language none of us understood, and with hand signals and a few words of French and German we communicated that we were looking for the best restaurant in town. The policeman smiled and directed us to what turned out to be a wonderful French country restaurant. Who knows if it's the one Oliver had been told about?

By this time it became clear to me (and most other economists) that Olly was a prime candidate to receive the Nobel Prize in Economic Science. His books and papers had many tens of thousands of citations. He had inspired a great deal of theoretical and empirical work on contracts, vertical integration, internal organizational forms, and many related topics. A small industry evolved that focused on "formalizing Williamson," testing various Williamsonian hypotheses, and contradicting Williamson. Indeed, many of Olly's ideas which had once been thought to be outside the mainstream had led to new or expanded mainstream field of research and teaching. Olly was always kind with and supportive of those who agreed with him and with him and those who did not. By this time as well, my own interests became even more focused on restructuring and regulatory reform of electric power systems around the world. However, my perspective has always been guided by the conceptual framework applying comparative governance that I learned from Olly.[14] I benefitted from opportunities to discuss some of the organizational, contracting, and regulatory issues I confronted with Olly.

Finally, in 2009 Olly did win the Nobel Prize. He, of course, was very pleased and I was very pleased as well. He came busier taking advantage of the opportunities that a Nobel Prize provides and I became busier after I became president of the Sloan Foundation. However, at least until 2012 when Dolores passed away, we always found

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[14] Paul L. Joskow, "Introducing Competition into Regulated Network Industries: From Hierarchies to Markets in Electricity," *Industrial and Corporate Change,* 5:2, 1996, pp. 341-382.

some time to chat and whenever I visited Berkeley, I made a point of getting together with him

Oliver Williamson was my teacher, friend and colleague for over 50 years. I will miss him.