

My Work As An Institutional Economist¹

Jan.31, 2008

A. Allan Schmid

Institutional Economics Theory

Theory identifies relevant variables and the relationships among them. It facilitates the formation of hypotheses that can then be empirically tested.² Theory tells us where to look. Good theory can also raise the level of public debate and join issues otherwise under obfuscation. My contribution to theory is in *Property, Power and Public Choice* (Schmid, 1987) and *Conflict and Cooperation: Institutional and Behavioral Economics* (Schmid 2004a).³ These books also contain a good deal of application and empirical references.

A core idea is that you can't design policy (institutions) if you do not know where human interdependence is coming from. It comes from inherent **S**ituations of incompatible use, high exclusion cost, economies of scale, non-rival goods, etc. SSP theory suggests that the institutions (**S**tructure) that affect **P**erformance are different for each source of interdependence. For example, factor ownership that is instrumental with respect to incompatible use goods is not relevant for high exclusion cost goods. SSP theory is useful for both impact analysis (effect of alternative everyday commercial institutions) and for change analysis (effect of alternative rules for making rules, including constitutions). In change analysis, performance is measured as a change in the everyday rules. If this theory proves itself, it will be the first time a unified theory for institutional impact and change has been formulated.

SSP is economic theory as much as any familiar neo-classical theory such as supply and demand and elasticity of demand. It may even be more useful in suggesting hypotheses subject to empirical testing. SSP emphasizes the measurement of performance in substantive terms of who get what (rather than in abstract aggregate welfare terms).

How have these books been received? Lynne Dallas in her casebook, *Law and Public Policy*, makes use of the theory in *Property, Power, and Public Choice* (Dallas, 2005) (5 &24-5) as does Arild Vatn in his book on environmental economics (Vatn, 2005). Kenneth Boulding described *Property, Power, and Public Choice* as a "careful and extremely convincing attack on the normative pretensions of what I am tempted to call 'vulgar' neoclassical economics, and even on the more elegant hidden valuations of welfare economics and public choice economics. It is an important contribution to the theory of normative economics and to grant economics (Boulding, 1979)." Marc Tool notes, "The book addresses a most significant concern. The effort to provide pertinent and applicable constructs for empirical institutional analysis with particular emphasis on property rights is, in considerable measure successful." "The book might well contribute to the building of additional bridges between the Wisconsin (John R. Commons) and

¹ I wrote the first draft of this paper exactly 50 years after my first publication in 1957.

² "By a theory we mean a statement of testable relations among empirically identifiable factors." Simon Kuznets

³ PPC was translated into Italian and Chinese. C&C was also translated into Chinese.

Texas (Clarence E. Ayres) wings of neoinstitutionalism (Tool, 1979).” Paul Heyne, author of an undergraduate text entitled *The Economic Way of Thinking* commented, “I believe it was your book that first compelled me to recognize the significance of given property rights in any judgments about efficiency, a lesson whose implications I am still discovering. Since I have long thought of you as a dialectical ally in the advancement of the understanding of law and economics, it gives me a special satisfaction to learn that you use my text.”⁴

The book also had its critics. Alexander Field of Santa Clara University said, “This is not an elegantly argued book (Field, 1989).” Terry Anderson, Montana State University, said, “To make positive statements about efficiency, it is necessary to accept a status quo starting point. Schmid is unwilling to make this acceptance and provides no adequate basis for choosing any other point. It is perhaps for this reason that his efforts to develop a new theory and paradigm fail (Anderson, 1979).” The fact that I argued that only moral choices via politics, not economics, can provide these evolving starting places evidently escaped Anderson.

John Davis of Marquette University in his review of *Conflict and Cooperation* suggests that the book helps “maintain momentum in institutionalist research and (is) one that provides a comprehensive resource for teaching (Davis, 2007).” Nathan Berg of the University of Texas (Dallas) observes, “Schmid’s ecumenicalism regarding the question of whose work should be included under the institutional and behavioral labels succeeds in yielding insight” and “lend(s) convincing weight to Schmid’s case for a large complex of channels through which institutions exert causal force in shaping irreducible conflict inherent in economic life (Berg, 2005).”⁵

The Concept of Cost

For a foundational concept in economics, cost is often poorly understood. Cost is multifaceted, cost is in part a function of rights/institutions, cost is not the intransigent absolute which it is sometimes, and sometimes not inappropriately, made out to be (Samuels and Schmid, 1997). “Costs are “a partial function of power (rights) and of the interplay of opportunity sets – itself a partial function of power (rights) – as well as technology, resources, and performances (278).” Cost is partly a human artifact that is the result of whose interests must be taken into account. Cost depends on whether a particular person or group is the buyer or seller of an opportunity. This work with Samuels is one of the most important theoretical constructs that I have been associated with. Some mistakenly read institutional economists as being critical of markets. For the record, I love markets—I just want to be the owner (seller) of all important opportunities. I want my interests to be a cost to others.

This concept of cost is fundamental for my work in law and economics (see section below). Some argue that efficiency can be a guide to choosing property rights, and thus they suggest that liability for damages be assigned to the cheapest avoider of the damage. But, who is the cheapest avoider of damage depends on whose behavior is considered reasonable. Efficiency cannot avoid a moral choice of whose preferences

⁴ Personal letter, July 10, 1991.

⁵ I was fortunate that my teaching assignments allowed me to develop my own materials. The books then grew out of years of teaching courses of my own design.

count because it assumes the very question that must be addressed, namely which party has the property right.

Circular and Cumulative Causation

“Cumulative causation describes a relationship between an initial change in an independent variable and the dependent variable, whereby the dependent variable in turn causes a change in the formerly independent variable in the same direction as the initial movement (87) (Schmid, 1999a).” Gunnar Myrdal developed the concept to understand how racial discrimination can become a self-fulfilling expectation. The concept also helps to understand the role of increasing returns to scale in economic development.

The sections that follow reflect the application of theory as it developed.

Agricultural Policy

Congress passed the Soil Bank Act in 1956 to reduce agricultural production and improve farmer incomes. I published an analysis of the program effects based on a survey of participants in Rock County, Wisconsin, in 1957 as part of my M.Sc. thesis (Schmid, 1957) (Schmid, 1958).⁶ This was one of the first analyses of this new program to be published. The survey suggested that the effect on production would be minimal, as had been the case with other programs such as acreage allotments, marketing quotas, and programs to move food and fiber into domestic and foreign consumption. “Most of the participating farmers are part-time farmers and older farmers looking for an opportunity to reduce farm operations.” The results suggested that the program would reduce the amount of land available to rent. (This is an early example of “get out of your armchair economics” that I advocate.)

The program evolved into the Conservation Reserve Program (CRP) as urban members of Congress were more interested in the conservation aspects of the program than income support. I personally made use of the program and put in all of the tillable land of my Nebraska farm in 1990, and signed up for another 10 years in 2000. My motives were not unlike the participating farmers in 1957—a way of obtaining income without managing a tenant, but still keeping ownership of the land. I hoped that 20 years of rest and recuperation from pesticides and herbicides would allow organic production one day.

Economic History

An examination of the history of water law in Wisconsin showed that the law evolves as the economy evolves (Schmid, 1962). Or, is it the other way round, or mutually determined? Wisconsin water law “has changed as the usage of its water has changed from the days of gristmills to sawmills to hydroelectric dams, to the multiple usages of water today.” A similar pattern was found in Michigan (Schmid, 1960). The earliest use of streams was for transportation of trapper supplies and furs. The Northwest Ordinance of 1787 declared that all navigable waters were common highways and were to be forever free. Given the dominant use, navigable water was defined as any stream capable of floating a canoe. This had to be reinterpreted as the fur trade waned and farming grew in importance. Wheat was ground into flour with the help of mill dams (which by the way impeded canoes). The legislative and court definition of public purpose went so far as to

⁶ As I write this, it is now 50 years since my first published work.

allow private dam developers to use a form of eminent domain to buy land needed for storage of water behind the dam. This has relevance today as courts debate whether land can be acquired by cities and resold to private developers (*Kelo v. City of New London*).

Also see a brief comment on agricultural history (Schmid, 1977) and the Great Depression (Schmid, 2007a).

History of Economic Thought

The Michigan State School of Institutional Economics was demonstrated by soliciting its members' to describe their work (Schmid, 2004c). "A case can be made that the center of institutional economics moved across Lake Michigan from Madison to East Lansing and blossomed in the second half of the 20th century with such Wisconsin Ph.D.'s as Raleigh Barlowe, Warren Samuels, Allan Schmid, Harry Trebing, and others." It was far from monolithic, but common themes and topics emerge including:

1. Evolution and role of learning
2. Cognitive science and role of beliefs
3. Disequilibria
4. Property rights
5. Less apologetics for current institutions as efficient
6. Land and public utilities
7. Industrial organization
8. Technology and science policy
9. Power, class, gender, poverty, income distribution

Who keeps course notes from their graduate classes? I did, and my notes for Selig Perlman's Capitalism and Socialism course in 1956 were published (Schmid, 1999d). I recall Perlman commenting on President Eisenhower. "The man from Kansas won't be able to stand his ground against the treacherous Russians." I resented the slur against us Mid-Westerners.

It was my habit for many years in Ph.D. oral exams to ask students to name five institutional economists that won the Nobel Prize. Most could not name *any* economists who won the prize! I now claim Allais, Arrow, Buchanan, Coase, Kahneman, Kuznets, Myrdal, North, Schelling, Sen, Simon, Solow and Stiglitz. Some would be surprised to be included, and I would not include all of their work under the institutional label.

Nevertheless, the themes cutting across these economists include (Schmid, 2001):

1. Understanding how the brain works, including bounded rationality and learning.
2. The above includes both deliberative, calculated choice and non-deliberative actions and habit.
3. It is an economics marked by non-equilibrium, non-marginal, and non-linear relationships of evolution and concern for feedback loops and learning over time.
4. The above is characterized by cumulative causation, adjustment processes, and path dependence.
5. The basic unit of observation is the transaction. The transaction view exposes the reciprocal and ubiquitous character of externalities.
6. Communication among the parties not only includes prices, but also other signals including quantities, orders, and persuasion.

7. It addresses expectations, especially those widely shared in the face of fundamental uncertainty.
8. Institutional economics avoids the value circularity problem and does not foreclose the political and cultural working out of whose interests count. An awareness that efficiency is not unique, but is derived from a particular set of institutions.
9. These economists in varying degrees address human interdependencies caused by incompatibility, exclusion costs, economies of scale, and marginal cost of another user being zero.

I wrote this piece for a *festschrift* honoring Warren Samuels, who in my opinion is the equal of all these prize winners.

I had the opportunity to write survey articles on the work of two leading institutional economists, Robert Frank (Schmid, 1996b) and the late Mancur Olson (Schmid, 1996a). Also, a short piece on another of my heroes, the late John Kenneth Galbraith (Schmid, 2008b).

Methodology and Method

Mechanism is a poor metaphor to describe institutions (Schmid and Thompson, 1999). Institutions are relationships among humans and they are not like the gears of a machine. The economy is not “like turning a crank attached to a set of gears where there is a fixed relationship between the crank’s motion and the last gear’s rotation. The gears have no ideas of their own, and they don’t get mad, as there is no cognitive element between events and action (1160).” I agree with Phillip Mirowski that it was unfortunate that economics choose to model itself after physics (Mirowski, 1989). Biological metaphors would have been more apt.

We agreed with Tony Lawson “that event regularities in economics are rare. There are only ‘demi-regs’ limited in time and space. People learn and change the links between events. Preferences are not fixed. Event regularity presumes a closed system while human affairs are open systems in which conjunctions among events are partly human artifacts (Lawson, 1997) (1160).” A simple example is the effect of a price increase on quantity demanded. “If the conjunction of a given price and quantity demanded is invariant, then if the price returns to its previous level, the quantity demanded should also return to its previous level (1161).” Empirically, this is frequently not the case as consumers learn.

Lawson argues that we must investigate deep causes lying beneath surface phenomena. “Attention to deep causes shifts our focus from merely changing events within structures to changing event possibilities by transforming institutions (1164).” Jason Potts (Potts, 2000) argues that assuming that the field theory of physics (everything is connected) is appropriate for human relationships (connections are evolving human artifacts) is at the root of institutionalist objections to neo-classical theory. I reviewed Potts’ book with enthusiasm (Schmid, 2003), and when I retired in 2006 and reduced my 1,500 volume library, his book was at the top of the save pile. The popularity of field theories in economics is one answer to Veblen’s question, “Why Is Economics Not An Evolutionary Science?” Closed system deterministic models are a strong attractor.

Social systems are in a continual process of becoming (emergence) wherein elements at one level influence the function of elements at a higher level, and the reverse

as well. The elements in the system function as they do because of their relation to each other. And, these relationships are dynamic. This ontological view distinguishes institutional economics from other approaches.

I had the good fortune to be included in a group of agricultural economics graduate students who read and discussed John Dewey at the home of Carl Bogholt, chair of the Department of Philosophy at the University of Wisconsin. I recall him sitting by the fire, flicking his cigarette ash onto the hearth (at least most of the time) and thinking so intensely that he perspired. For some reason, Carl adopted agricultural economics to bring his philosophy to earth. He published little. The story was that he had set out in his career to solve certain problems and was never satisfied with his results. He did publish “The Value Judgment in Land Tenure Research” in which he asked researchers not to presume the goal of land tenure policy and then search for how to achieve it, but rather to study both means and ends together. This was the essence of Dewey’s pragmatism. My MSU colleague, Glenn Johnson, was eclectic in his approach to value questions and we had many spirited discussions when he thought my pragmatism went too far. I reviewed his review of philosophic approaches by agricultural economists (Schmid, 1978). I agreed that it is important for economists to study the normative, truth is social, and the use of the Pareto-criterion for policy is misleading and can’t be used to support or dislodge the *status quo*. I argued that the alternative to the “deceptive normativist” is the “naked normativist” who puts his personal value judgments up front for all to see as championed by Gunnar Myrdal.

In a paper entitled, “All Policy Instruments Require A Moral choice,” I argued that “Policy makers can help people see that government has a face and is not an abstract irritating force. The face of government is the face of one’s neighbors. Seen in this way, the necessity of moral choice is clear. The choice is not government versus no government, but whose side government must inevitably take (146) (Schmid, 2002a).” If you think a policy decision is easy, you don’t understand the problem. At a 2005 MSU conference on the Ethics of Development, I coined the concept of the “squirm factor” to describe the agony of deciding whose preferences count. If there is no cause for unease, we have missed the ethical issue. Economists, no less than others, go to great lengths to avoid the agony of moral choice. Many policy issues are framed as technical issues. For example, it is common to frame pollution as an externality caused by poorly defined property rights, with the economic scientist, of course, ready to supply the clear definition. But, the problem is to work out a political answer to the question of whose preferences (whose freedom) should count. This requires creation, not discovery of something pre-existing. This is my meaning of political economy.

Along with Ronald Coase, I find “Blackboard Economics” of limited usefulness.⁷ Deductions from unreal assumptions can hardly be considered findings. No matter how sound the logic and elegant the mathematics, it is often hard to see the relevance. I understand the demand for Blackboard Economics. An economics based on observation is hard work, messy, and time consuming. Some of the problem can be illustrated by a debate between Herbert Simon and Gary Becker over how to explain the marked

⁷ Notice I said “limited,” not worthless. For example, Kenneth Arrow’s “impossibility theorem” is a useful formal demonstration that individual preferences cannot be aggregated without violating some widely agreed on principles such as non-dictatorship. But then, institutional economists never believed in aggregative welfare measures.

historical increase in female labor force participation. Becker relies on a theory with limited variables and “finds” that the increased supply must be due to a change in relative prices. He sees no reason to search for evidence, as the theory is so clear. Simon, on the other hand, invites us to look at a change in female preferences and sense of identity. Unfortunately, Simon did not search for evidence either. The point is that theory tells us where to look. If theory assumes fixed preferences, contrary evidence will never be found.

I did a lot of work aimed at raising the level of public debate. The idea was to question an established point of view with the aim of opening up the field for more promising or useful lines of thought. Two examples will illustrate. Many economists and general public make an appeal to freedom to justify a particular policy. Milton Friedman who once said “Freedom is my God” is a prime example. However, a transactional view reveals that often one person’s freedom and another person’s non-freedom and exposure to costs created by others. Thus, it would be more honest if an interest group were to say, “My freedom is more important than yours.” Likewise it is common to say efficiency and income distribution must often be traded off. A property rights perspective reveals that efficiency is not a fixed, given, prior thing, but is itself a product of a particular set of rights. Change the rights, and you change what is efficient. I call it the “value circularity problem.” In these cases, theory is used to remove obfuscation and gives no support for one policy or another. Institutional economic theory is troublesome for minds at rest and thus I have named my policy blog “The Troublesome Economist.” <http://instecon.blogspot.com>

An evolutionary approach was used to understand how lobbying organizations that provide a benefit to all can nevertheless obtain dues paying members (Schmid and Soroko, 1997). “A simple cross-sectional comparison of the characteristics of successful and latent interest groups is not sufficient to understand how they overcome the free rider problem. It doesn’t reveal how organizations get started and get in a position to provide selective services or to find substitutes and compliments for them. An evolutionary methodology reveals a more complex picture (283).” (More below in section entitled “JEBO and Soybeans.”)

An examination of usefulness of experiments, case studies, and econometrics in institutional research is made in Chapter 4 of *Conflict and Cooperation*. A survey of various methods used to understand access and control in Sub-Saharan African resources (Schmid, 1994b) resulted in the following conclusions:

1. Every method (case studies or econometric), contains a model of relational variables.
2. Every model is a story.
3. Every method/model includes and excludes some variables. And, the categories of variables are matters of rhetoric and are not self-evident and self-defining.
4. Different variations in space, time, and institutions are necessary to test different questions.
5. Strategic questions of epistemology may be distinguished from alternative methods to explore these questions.

Theory is critical for the formulation of hypotheses for empirical testing. For example, some economists have asked whether institutions or investments in education, infrastructure, or technology are most important to economic development. Variables for all of these are then dumped into a regression with rates of growth as the dependant

variable. This approach is poorly conceived. Institutions influence what physical factors are available and when. Thus, I have suggested a two stage approach. First, test the relationship of the physical factors to output and income. Then, test the relationship of institutions to the presence and combination of the factors of production. For example, the first step might be to understand the role of creating increasing returns (of infrastructure) in economic growth. Then the achievement of increasing returns (or infrastructure) becomes the dependent variable with alternative institutions as the independent variables. This conception came to me from my colleague Glenn Johnson who objected to econometricians who lumped various measures of physical capital, credit, human capital and technology into a single equation. For example, he pointed out that if the equation included hybrid corn instead of just quantity of seed, there was no need for a technology variable. If changes in physical production functions are well specified, variables for institutions will add nothing. But, it is institutions that explain the development of hybrid corn, or the availability of credit, or labor's timeliness (Schmid, 2000b). The latter depends in part on how human beings are treated and that may be a function of labor contract institutions. Unions and grievance procedures are not factors of production, but they may affect labor's marginal value product.

A two-stage analysis can also be applied to institutional change analysis. For example, a few years ago the mayor of Mexico City became elected rather than appointed—a change in the rules for making rules. The first question is how did city ordinances change with the elected mayor. These ordinances are the dependent variable and the political rules are the independent variable. The second stage asks how did rules for making rules change. The political rules now become the dependent variable and independent variables might include culture and learning.

Some economists regard empirical work without an upfront formal deterministic model to be data mining. Such models are in some economists' minds the essence of contemporary economics. I don't mind being called a data miner. I did a lot of surveys to better understand how the modern economy works without any deterministic model in search of natural laws. For example, I asked who participates in a government agricultural program such as the Soil Bank; How large is the land value appreciation accompanying suburbanization; What is the difference in the cost of providing public services with alternative population settlement patterns; Do rural people in Russia, Poland and Michigan differ in self-initiative; Do people in different communities differ in the pattern of motivation in the context of a hypothetical situation in which opportunism is possible; What are the rates of return to a project to dredge the Detroit River under different rules? My observation is that a lot of economists (institutionalist or not) do exactly this kind of work and communicate the results to the public even if not in the so-called best journals. One can also observe much literature in the journals with a formal model upfront identifying variables and relationships. When it comes to testing, the researcher must choose proxies for these variables that are only tenuously connected to the model. I guess this qualifies as modern economics and avoids the charge of data mining, but may give us less understanding than can be obtained with a good case study.

Methods of scholarship include organizing one's thoughts, writing them down, and adding to them over time. For some time, I have been in the habit of writing Journal Files, scraps and bits of ideas and observations, practicing one's craft on the events of the day. Some become the kernel of articles and even found their way into books. A

collection of my Journal Files from 1991 to 2005 were published (Schmid, 2007b). I asked my graduate students to write a two-page essay each week applying what they read to their own interests and experience.

The method of funding agricultural research in the U. S. enabled me to develop a research program following my own intellectual curiosity. Each state agricultural experiment station received annual grants from the Federal government and the state's legislature. At MSU, the Dean allocated these funds to departments and the department chairs to individual faculty members. It was something like an endowed chair even for the most junior faculty members. The College of Agriculture faculty was the envy of the rest of the university who had to seek outside research funds to cover time released from teaching. I only had to write a brief project proposal to be summarily approved by my chair and the Experiment Station director. My project addressed a broad range of problems and only had to be revised periodically. For many years my project was titled "Collective Action in Agriculture and Natural Resources." The stable research funding base also benefited graduate students who were given research assistantships. Students could choose faculty advisors on the basis of mutual interests rather than faculty with already externally funded projects. Today, almost no students are supported on Experiment Station funds.

Early in my career, I sought guidance from senior scholars. I sent T. W. Schultz (later a Nobel Prize winner) a paper entitled "Property, Power, and Progress." His gracious response included the following: "Having profited much as a graduate student of John R. Commons, I feel a strong intellectual affinity for what you are attempting to do. It is no easy task to bring the concept of 'collective action' into economic analysis. Suppose one were to accept for purposes of the dialogue that 'collective action' will prove to be a 'potent variable in growth,' how will you proceed to provide the necessary proof?"⁸ Good question.

Behavioral Economics

Economics is most useful when built upon a realistic understanding of how the brain works. The attempt to build an economics on simple assumptions of behavior rather than looking for empirical regularities has proven sterile. It is good only for deductive exercises. American institutionalists have from the beginning used the best available psychology, including John R. Commons who often referred to negotiational psychology. He emphasized expectations ("futurity") and understood them as mental cognitive images. These are not mechanistic processes. In Chapter 3 of my *Conflict and Cooperation* (Schmid, 2004a), I summarize bounded rationality, the modular brain, behavioral regularities (emphasized by Daniel Kahneman), and learning. My work on social capital acknowledges that humans are motivated by more than selfish preferences (see below).

One of the central concepts in behavioral economics is Herbert Simon's theory of satisficing (Schmid, 2008d) and the theory of lexicographic preferences (Schmid, 2008c). Both are consistent with the facts of the limited information processing capacity of the human brain.

I owe my interest in behavioral economics to my colleague James Shaffer. He asked me to teach his course on Institutions, Behavior and Performance when he was on

⁸ Letter to the author, June 13, 1967.

sabbatical leave. I adopted his student-centered approach in my own classes. We wrote a number of papers together and stimulated each other's thinking (Schmid and Shaffer, 1964).

JEBO and Soybeans

In an outside review of my department in 2005, one reviewer urged us to publish beyond agricultural economics journals. He praised an exceptional, young colleague for publishing in JEBO. At first it did not register. Oh yes, the *Journal of Economic Behavior & Organization*. When I published there in 1997, I did not know it was so exemplary. I wanted to know how the American Soybean Association overcame the free rider problem when the benefits of its lobbying benefited all soybean farmers whether or not they contributed to the organization. From the historical record, I found that emotional response to what many farmers regarded as unfair foreign competition acted to suspend narrow calculation of individual advantage. "The standard model of interest group behavior emphasizing selective incentives (from Mancur Olson) can be supplemented by variables of history, negotiation, political entrepreneurship and cleverness, political-representative institutions, dedication and emotion. The success of groups in overcoming the free rider problem is a complex, interactive, non-linear, path-dependent, and somewhat indeterminate phenomenon (Schmid and Soroko, 1997)."

Not everyone liked this article, and the following is included for those young scholars dejected by being rejected. The reviewers for the *American Journal of Agricultural Economics* said, "I don't think that 34 pages of detailed description of happenings over time, ... and detailed specifics of each and every related event is appropriate for an article in AJAE." A second reviewer said, "few AJAE readers will be interested in the paper because it offers no methodology and no suggestions for public policy or private firms." The editor in respectively declining publication said, "The paper certainly is interesting in its own right; I enjoyed reading it." I guess being interesting is not always sufficient.

Law and Economics

Some think law and economics is a relatively new sub-field of economics, but it has always been at the core of institutional economics, at least since John R. Commons, *Legal Foundation of Capitalism* in 1924. The seminal work in this field today is being done by Warren Samuels who I have had the pleasure to learn from and work with. Together we published a collection of theoretical and empirical papers (Samuels and Schmid, 1981). One of these was by my graduate assistant, Josef Broder, who empirically observed the impact of alternative rules for making rules—namely the appointment or election of District Court judges in Michigan (Broder, 1981). The results were troublesome for those who believe that rulings are simply a matter of logic and judges make no difference. Rather, elected and appointed judges reflected different constituencies and made different decisions with respect to such cases as those involving driving under the influence of alcohol. This topic reflects a theme common in my work, namely "whose preferences count?" An earlier work that we did on the impact of lower court reorganization in Michigan (Broder and Schmid, 1973) drew the ire of one district judge who in a letter to the Director of the Michigan Co-operative Extension Service took "violent exception to the slanted, mis-stated and misleading article.... I think it is a

travesty to allow tax monies to be used to financé this type of article” Our department chair backed us up. Also see (Broder and Schmid, 1983).

Markets are not something that emerge spontaneously (Schmid, 1999c). They have a legal foundation. This was ignored in some of the advice that the formerly Communist countries received when they went capitalist (Schmid, 1994c).⁹ Also see (Schmid, 1992c). This understanding also applied to poor countries. Countries such as Mali are urged to adopt modern laws of contract, but should they adopt those of France or the US, and the ones that were prevalent in the early days of their development or as they stand today (Schmid, 1992b) and (Schmid, 1992a)?

The institutional law and economics approach to environmental law comes to different conclusions with respect to the choice of injunction or liability as relief to injury, externalities and ownership, use of markets versus governmental regulation, and the takings issue (Schmid, 1995) and (Schmid, 1999b). These are not matters to be determined by efficiency tests, but are fundamentally questions of whose preferences count. Economic value is not independent of law. Contingent valuation techniques do not provide definitive answers when willingness to pay differs from willingness to sell.

My view of institutional law and economics was summarized in (Schmid, 1989b) and (Schmid, 1994a). Several propositions stand out:

1. Rights have their origin in the settlement of disputes stemming from conflicts of interest.
2. People are uncertain as to the effect of any proposed institutional change and the ability of any political representative to serve their interest.
3. Intangible property is exposed in a market economy.
4. The marginal value product of labor is not a given, but is influenced by institutions.
5. Experience with collective action builds trust which contributes to control of opportunistic behavior in the face of high exclusion costs.
6. The economy and polity are interrelated and change is marked by evolution rather than movement to an equilibrium.
7. Rights related to the credit system are a major institutional theme.
8. Institutional creativity and innovation are a hallmark of the institutionalist.

Institutional law and economics is surveyed in (Mercurio and Medema, 1997) and in (Veljanovski, 1982). See also (Mercurio, 1989)

Work on intellectual property rights is noted below in a section on bio-technology (Schmid, 1985c) and (Stallmann and Schmid, 1987). Also see the above section on economic history for work on the evolution of water laws. Also see (Schmid, 1976) .

Probably the most widely read of my work with the law was an easy to read compilation of Michigan’s drain law (Schmid, 1963). The legal community again probably wondered why an economist would venture to write such a thing, but of course, it was not in their interest to do it, and they had not. It allowed newly elected Drain Commissioners and farmers to understand what had to be done to establish a public drain.

⁹ I presented a paper to the FAO Workshop, Nitra, Czechoslovakia, on restructuring agriculture in central and Eastern Europe in 1992; consultant to the World Bank Mission to Romania in 1993; and a comparative study of self-initiative in Poland, Russia, and northern Michigan in 2003.

Over time, there was a demand for reprinting and revision, but my research interests led me to other things. (Such are the incentives of the academy.) Michigan's drain law was established during its early settlement when much of its best agricultural land needed drainage. The law favored those who wanted quick action with no concern for environmental values of wetlands. A relatively small number of people could initiate a process of collective action via special taxation districts.

Land Use

Institutional economics (and land economics) is concerned with shifts in major land uses, not in small adjustments in inputs and enterprises at the margin that are the concern of micro-economics (and farm management) (Schmid, 1969b). My first empirical work in land use came as a result of being invited to be a visiting scholar at Resources for the Future in Washington DC in 1964. There I had the privilege of learning from Marion Clawson, former Director of the US Bureau of Land Management. I studied the transition of land use from agriculture to suburban housing (Schmid, 1968). I was impressed by the large increase in land value accompanying this transition and made an econometric analysis of the factors associated with the magnitude of the difference in farm land value plus development costs and urban values (namely the economic rent). The analysis showed that "the greater the percentage change in population growth (of the central city and urbanized area) the greater the percentage appreciation in land value. However, the fact that there is considerable variation in appreciation levels among cities, even among those whose populations are growing rapidly, suggests a fruitful area for further research (53-4)." Other significant variables were percentage change in land area, median family income, and percentage of population living in the fringe.

Thus, began my fascination with the implications of economic rent and its distribution. I am enough of a follower of Henry George to appreciate that rents are often the product of community and infrastructure investments rather than any effort by landowners. My contribution was to understand that "The real importance of the distribution of rent gains is not one of equity alone, but of what kinds of products result (57)." I observed that many public land use plans were frustrated by the great prize that awaited developers who could break the plan and convert their particular parcel of open space to housing.

Economists know that a single firm could capture all of the rents and could maximize returns by creating a quality product maintaining open space amenities. But, such is not possible with each land owner and developer maximizing his own profits, small parcel by small parcel. This led my mentor Marion Clawson to suggest suburban development districts. Some so-called "new town" developers such as in Reston, Virginia and Columbia, Maryland were able to capture the rents from commercial developments and use it to provide open space and other amenities. However, this was not widely copied. The storied every-man-for-himself entrepreneur dominates to this day. "It is true that consumers can make land developers take certain things into account by buying or not buying; however, certain things cannot be demanded this way...." As Thomas Schelling has observed in other contexts, consumers have a wealth of choices available, but often not what kind of environment they want to live in. I recall some at public meetings at the time objecting to the god-like dominance of the vision of Reston's

and Columbia's developers. They did not realize that these new town developers offered an alternative to the standard cookie-cutter suburbs.

I had the opportunity to present my findings on rural to urban land conversion to the National Commission on Urban Problems chaired by Senator Paul Douglas in 1967.¹⁰ I even had the temerity to suggest that some of the appreciation gains might be captured for the public with a capital gains tax. Also see, (Schmid, 1969c) and (Schmid, 1970).

Methodological note: My primary data on suburban land values came from the National Association of Home Builders. I had run my regressions and sent the draft manuscript out for review. It was my good fortune to include the actual data series. And even more remarkable was the fact that one of my reviewers was very knowledgeable about this particular data. He noted that I had used published data that had later been revised without my knowledge. I was quite satisfied with my explanation of the original significant variables. It all seemed quite reasonable. However, with the new data, some of these dropped out and others became significant. I did not have much trouble developing new rationale for why the newly significant variables also made sense. There is a lesson here. One can become too satisfied with one's theoretical reasoning. Usually, when results fit our priors we stop searching. When they do not, we begin to question our methodology or data. There is hardly any study where additional tests might be run or questions raised about the veracity of the data. We tend not to dwell on these if the results fit our priors or otherwise generally make sense.

Why do Americans huddle up in a relatively few metropolitan areas and leave the rest of the country unsettled? We know that there are immense costs to congestion. Part of the answer is the problem of individuals making the best choice at the margin they can make. It would take collective action on a large scale to reverse the social trap (circular and cumulative causation). The problem can be seen within cities as well. International travel provided me with the example of fresh food distribution in Paris. There may be nostalgia for Les Halles, the once famous market in the middle of Paris, but it put a lot of trucks and garbage into the center of the city that did not need to be there. Still, no individual seller would move to a new location because there would be no buyers there. The city solved the problem by a non-marginal change closing the old market in the late 1960's and building a new one in suburban Rungis. Most everyone agreed that the new location was better. I conceived of a parallel case in Michigan (Schmid, 1991). Why do we add population to congested southeastern Michigan when the same growth added to new places such as Mt. Pleasant would be Pareto-better for the people involved. Mt. Pleasant is too small to provide urban amenities and the Detroit metro area suffers from diseconomies of scale, including great pressure on the waters receiving its waste. But, individual households looking to settle can't find jobs in Mt. Pleasant.

To provide better information on the costs of alternative settlement patterns, I joined a team of researchers organized by the Southeast Michigan Council of Governments. It was referred to as the Michigan Fiscal Impact Study. One part of the research documented that the cost of providing infrastructure (roads, sewer, etc.) was sensitive to the density of suburban development. My part of the study, with a survey of Michigan local governments, documented the relationship between city size and government spending per capita (Schmid, 1997). It found that if the same amount of population growth were added to a number of smaller governments that could experience

¹⁰ This is the Douglas of Cobb-Douglas production functions.

economies of scale there would be substantial saving when compared to the same population added to a few larger units already experiencing diseconomies of scale.

The Southeast Michigan Council of Governments was a good forum to discuss the findings, but it is not a regional government with administrative powers. Lots of conferences are held discussing “smart growth” but not much comes of it. It would take a concerted and concentrated effort by universities and urban planners to prepare the public and its political representatives for the kind of collective action necessary to change current costly population settlement patterns. Universities, public planners, politicians, private developers, and citizens have not come together to extract themselves from the social trap (vicious circle) that now dominates. Marginal decisions, no matter how well intentioned, will not do it.

A travel grant allowed me to attend the International Association of Agricultural Economists in Lyon, France, in 1964, giving me my first insight into international agriculture. I met Andre Brun who would invite me back in 1974 to accompany him while doing field work in the Massif Centrale and the Alpes. France’s mountain agriculture was under pressure from urban vacationers seeking holiday homes. At least, it kept the local baker in business. I returned once more in 1984 as a consultant to the Institut Nationale de la Recherche Agronomic investigating how dairy farm waste threatened the quality of ground water so essential to the water bottler, Vitell. Vitell bought some critical parcels and leased the land back to farmers specifying manure handling practices.

A sabbatical brought me to the Economic and Social Research Institute in Dublin for a study of urban open space preservation (Convery et al., 1983). Because of Ireland’s experience with the English taking their land, the Irish constitution strictly protects private property. This has been interpreted to require compensation if development of serviced land is denied. For example, Dublin rugby clubs would like to sell their playing fields for urban development. Local planning officials know the courts will ultimately require compensation, but this will take time giving officials room to negotiate for less intensive development. Here I learned the difference between nominal law and law in practice.

Social Capital

Contrary to the exclusively self-interest assumptions of many economic models, observation reveals that people are also motivated by attitudes of caring for each other. Together with my colleague, Lindon Robison, we defined social capital as sympathy. If Alpha has sympathy and affinity for Beta, Beta can expect favorable treatment from Alpha. In a thought experiment, we investigated how relationships affect sales prices of a used car (Robison and Schmid, 1991). The price deviated from the Blue Book as a function of affinity.

Social capital must be distinguished from its outputs, as is the case for physical capital. The Reader’s Digest conducted an experiment in which a wallet with money and identification was left on the street in a number of countries and different rates of return were observed. They did not inquire as to motive for the returning behavior. It could be based on an expectation of reward, a learned ethical norm, or as an expression of sympathy. A thought experiment was designed to distinguish these motives and measure the stock of social capital across communities. Of course, people said they would return

the wallet, but the reasons (motives) they gave differed across communities in Michigan (Schmid, 2002c). This suggests a productive line of future research to determine why communities differs with respect to social capital. For more on the theory of social capital see (Schmid, 2000a) and (Schmid, 2002b)

The Professor Goes to Washington

Teaching benefit-cost analysis is one thing, doing it in the context of a Federal water resources development agency is another. Thanks to the efforts of Steve Smith and William Lord of the University of Wisconsin, the Office of the Secretary of the Army that oversaw the U.S. Army Corps of Engineers civil works was one of the few offices that invited academics to spend a year working with its staff. The Secretary's office had a small staff of systems analysts who monitored the project analysis and budgeting process. I was invited to join the Systems Analysis Group (SAG) in 1968-69.¹¹ Initially, my office was in the Pentagon and then moved to the Corps' offices.¹² My first assignment was to monitor the Corps' response to a Bureau of the Budget (BOB) request to "develop the methodology for the comparison of alternative study methods for complete investigation and study of water utilization and control in estuaries." This arose in the context of pressure from a powerful Congressman from Baltimore that wanted a physical hydraulic model of the Chesapeake Bay. He was aware of the Corps' model of San Francisco Bay that in scale physically represented the topography of the bay. It was bigger than a football field and in addition to its scientific value was a huge tourist attraction. Water is sluiced through the model with dyes and sediments to determine the effects of physical alteration of the bay. The Corps had prepared a preliminary analysis of what such a model could contribute to water resource planning, and probably would have been happy to construct it. The BOB was concerned with the costs and benefits of the project and some engineers thought the same data could be obtained from mathematical models at less cost. This I knew from nothing!

What to do, I asked my boss, the senior civil servant in the office. He replied, "you put your butt to chair and pencil to paper." Thanks a lot, I thought to myself. I sat in many meetings with the Corps' Committee on Tidal Hydraulics and its consultants pro and con and tried to keep them honest while avoiding looking silly. I traveled to see the Corps' physical model of the Mississippi levee system in Vicksburg and talked to a lot of people, and somehow a report was issued, August, 1969. As best I could tell each type of model had different strengths and weaknesses. The 8.6-acre model housed in a 14-acre building was built in the late 1970's and later abandoned.

While with the Systems Analysis Group, I wrote a paper for the Joint Economic Committee chaired by Senator William Proxmire (Schmid, 1969a). I argued that cost-benefit analysis should be applied not just to the evaluation of public expenditures, such as flood control projects, but to regulatory rulemaking as well. I saw that government

¹¹ President Johnson with the example of Robert McNamara in the Department of Defense began to require program planning and budget (PPBS) analysis throughout the Federal government. The core idea was to group agency outputs by broad categories rather than agency by agency thus facilitating complementarity and substitutability and facilitating cost minimization alternatives. This approach swept the country and Michigan adopted it in the 1970's. I participated in training sessions for agency staff (Schmid 1973).

¹² At the time, my wife worked in the press office of Senator Phillip Hart who was active in opposing a defense program of anti-ballistic missiles. She urged me not to wear my "Stop ABM" button to the Pentagon.

affected the allocation of resources by public spending and by setting the rules for the private sector and that cost and benefit questions applied to both. The paper was surely lost in the pile, but it “prompted Jim Tozzi, Director of the Systems Analysis Group to begin applying the group’s cost-benefit reviews to regulations issued by the Corps as well. Later abolished by Congress after accusations of interference with Corps’ prerogatives (Conley, ??).”

Tozzi moved from Army to become Division chief of the Office of Management and Budget overseeing the EPA under Presidents Nixon, Ford, Carter, and Reagan. On the web page of his Center for Regulatory Effectiveness, Tozzi tells his story this way:

Commentary on Dr. Alan Schmid's Paper by Dr. Jim Tozzi, Former Director Systems Analysis Group

["Effective Public Policy and the Government Budget: a Uniform Treatment of Public Expenditures and Public Rules"](#) was authored by Dr. Alan Schmid, a Visiting Professor to the Office of the Secretary of the Army, and it suggests a regulatory agenda for the activities of the Office of the Secretary of the Army. This seminal article, which contributed to the development of centralized review of regulations, had two important impacts.(1) The article was instrumental in initiating Systems Analysis Group review of the Army Corps of Engineers' regulations, as opposed to earlier emphasis on economic review of the Corps' civil works projects. (2) The article laid the foundation for having members of the Systems Analysis Group establish and manage the Quality of Life Review process within the Office of Management and Budget (OMB). This article was also included in congressional oversight hearings conducted by Senator William Proxmire on Planning, Programming, and Budgeting Systems. As noted above, the experiences of the Systems Analysis Group were instrumental in developing the detailed procedures for the Quality of Life Review. Such activities helped establish the Systems Analysis Group's preeminence in this field and contributed to its alleged "usurping of the authority of the Chief of the Army Corps of Engineers," which ultimately led to the Group's abolition by an Act of Congress.

One never knows how one’s ideas will be used. EPA and several other regulatory agencies tended to work under legislation that did not allow for tradeoffs. Private activities were simply prohibited when certain conditions were present. This kind of thinking irritates economists who are schooled in opportunity costs. Still, I had no idea that Nixon with Tozzi’s help would use it to beat up on the EPA after passage of the Clean Air Act of 1970 and the National Environmental Policy Act of the same year. In terms of my own values, balancing of costs and benefits made sense, but not go too far in estimating costs. Of course, it is a value judgment as what is too far. Information is not neutral when the political process decides these judgments.

Tozzi eventually left the government and established his own consulting firm whose clients wanted to reduce the impact of regulation on their business. His Center for Regulatory Efficiency's mode of operation is to undertake work on a range of issues for a number of firms, so the Center does not represent *per se* any particular member of an

industry. CRE is supported by a number of trade associations and private firms, usually in the form of a monthly contribution to support the Center's activities. The CRE web page states, "CRE has a keen understanding of the "Good Government" statutes which "regulate the regulators" by requiring agencies to undertake certain analyses to gauge economic and other impacts upon businesses and the public prior to issuing a regulation."

My experience in Washington and especially learning from Jim Tozzi and Steve Dola was to give my book on benefit-cost analysis a political economy flavor not found in other academic works.

Benefit-Cost Analysis (BCA)

"What is the role for benefit-cost analysis in a democratic Society? BCA is a framework for systematically displaying the consequences of alternative spending and regulations in such a manner that the ranking of these alternatives is the result of applying the politically chosen rules reflecting explicit performance objectives (285) (Schmid, 1989a)." Also see (Schmid, 2004b). BCA from an institutional economics perspective is quite different than the standard neo-classical approach. "BCA is not a device for telling government what it must do to avoid being labeled irrational (often stated as being "political"). It does not further market or economic values over other values. Indeed, this distinction between values is meaningless (285)." "There is no dichotomy between being efficient and being political. The issue is, rather, about what to be efficient (286)." The institutional perspective envisions a dialogue between analysts and public decision makers. "It is not something the analyst does alone and presents finished to the world, summarized as a single rate of return. Such isolated, sweeping and noninteractive analysis invites piecemeal, ad hoc decisions as politicians change the analyst's unintended presumptuous resolution of value conflicts (286)."

Benefit-Cost Analysis: A Political Economy Approach identifies several key steps in the analysis where political input is necessary: program information structure, estimating project effects, valuation of direct effects, opportunity cost adjustments, valuation of non-marginal projects, the valuation over time (discount rate) and selection criteria. All are subject to uncertainty. These are not just technical issues, but require political decisions that turn on whose preferences count. The resolution of each issue is equivalent to a property rights decision, namely who has what opportunity when interests conflict.

BCA is really not a separate subject for it requires knowledge of many sub-fields in economics ranging from micro to macro and welfare economics. One of the theoretical concepts that gave me the most trouble was consumer surplus. In my book, I questioned the use of this partial equilibrium concept (Chapter 7). I agreed with Joan Robinson who said, "it is a bogus concept of course" and with I.M.D. Little who said, "The best criteria for investment decision must, within wide limits, be determined at the dynamic and administrative levels-and not at the level of static welfare theory." There is a great gulf here between theorists and practitioners. Estimations of consumer surplus have appeal to those clients paying for BCA since it makes their benefits look large as agencies compete for budgets. The U.S. Forest Service quoted Paul Samuelson in support of its use of consumer surplus in estimating the value of recreational products from public lands. So I wrote to Samuelson asking if this was appropriate. He replied "I share some of your concern about partial-equilibrium complications. Still I know too

little about the Forest Service use of the concept to judge whether more harm than good is entailed. Modern writers seem to like numerical bounds on the errors involved in areas-under-the-curve. I would have to judge each use on its algebraic merits.”¹³ With all due respect, I don’t think the issue is algebraic. If consumer surplus is computed on the benefit side, it must also be used to estimate costs. Consumer surplus implies differential pricing, and such pricing practices are a contestable property right in both the public and private sectors.

The book received several favorable reviews. Edwin Mills of Northwestern University wrote, “unique...Allan Schmid’s book integrates benefit-cost analysis with the ways government decisions are actually made in the United States. By no means an apologia for all the U.S. governments do, it simply integrates benefit-cost analysis into the institutional and subject matter framework. The book contains much wisdom and much common sense, as well as a firm grounding in the relevant technical literature.” Jerome Rothenberg of MIT wrote, “This book is distinctive and makes a real contribution. It is a fine integration of project evaluation with political decisionmaking, and contains bushels of good, often fresh, advice on a wide variety of issues.” James Swaney, Wright State University wrote, “His prose is guided not by the goal of winning converts to a particular economic doctrine, but by the goals of analyzing the actual milieu in which BCA is practiced, and contributing to reform of both the analytic framework and the policy process (Swaney, 1991).” Still, I judge the book has had limited impact. The demand for an authoritative role for the economist rising above the political fray is too strong. James Payne (Payne, 1991), for example, objected to political input that he believes creates a “pro-state bias.”

This book grew out of my experience teaching a graduate course and with the government in Washington.¹⁴ In the late 1960’s, the Federal agencies constructing large scale water development projects were under attack and responded by proposing a new set of guidelines for doing BCA to be used by all agencies.¹⁵ During the summer of 1969, the Water Resources Council (WRC, an inter-agency group established in 1965) sponsored a series of public hearings to receive comments and criticism on a report of its Special Task Force entitled, *Procedures for Evaluation of Water and Related Land Resource Projects*.¹⁶ At the conclusion of the hearings, seven universities were asked to test the new proposed procedures to see what would emerge. Michigan State University

¹³ Personal letter, June 7, 1988.

¹⁴ The College of Agriculture established a computer lab for students in 1983. I learned to use the IBM PCs there and designed an investment return discounting exercise for my graduate BCA class.

¹⁵ The *Principles and Standards for Planning Water and Related Land Resources*, were published in 1973, but in 1983, they were repealed by the WRC and replaced by the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, commonly called the *P&G*. They were removed from the "Rules" section of the *Federal Register* and placed in the "Notice" section, thus becoming guidelines rather than rules for federal agency planning. This avoided any court suits challenging their application by the agencies. The WRC was denied funding by Pres. Reagan. Do you ever get the feeling that you have spent a lot of time working on something that comes to naught? Perhaps that is one of the reasons I eventually quit teaching BCA.

¹⁶ I sent a copy of my analysis of the Principles and Standards to Arthur Maas, Dept. of Government, Harvard University. He wrote me and said, “Your comments on the discount rate are eloquent. Steve Marglin testified in Washington on this.” Letter of March 28, 1972.

was one of these. Together with my graduate assistant, William Ward the procedures were applied to a Corps of Engineers dredging project on the Detroit River Trenton Channel to improve navigation for the delivery of iron ore to a steel mill (Schmid and Ward, 1970). The Corps had published its evaluation under the old procedures, and we showed what the evaluation would look like adding environmental and regional development impacts as directed in the new procedures. (As a historical footnote, up to that time the Bureau of Reclamation had typically showed local secondary benefits while the Corps did not.)

The 31 million dollar project would have allowed the McLouth Steel Company to develop land it owned for a primary steel mill bringing in iron ore and limestone with the channel improvement. But, no matter how sophisticated the benefit-cost analysis, fundamental uncertainty makes the benefit estimation problematic. McLouth went bankrupt in 1981, again in 1995, closed in 1996, and two blast furnaces were demolished in 2004.

Together with colleagues from the University of Wisconsin, we published what we had learned from the tests (Bromley et al., 1971). Among other things, we noted the relationship between planning and evaluation and rules for making rules. “It is unrealistic to suppose that a congressional committee dominated by Western congressmen, who must stand for reelection every other year, would request or use a comprehensive analysis of the federal reclamation program, showing the redistributive subsidies involved and the shift in location of agricultural production involved (39).”

Given the politics of the pork barrel, members of Congress liked to talk about the benefits of public spending to their local constituents. Never mind that the project might simply have changed the location of economic activity from one state to another or even one community to another within the same Congressional District. When the Principles and Standards were being debated, some members of Congress wrote the WRC urging that secondary benefits to local economies be included. They probably each thought that projects in their districts would thereby look better and that perhaps claims of great benefits would increase the total size of the water project budget. The latter seemed unlikely since there was (and is) already a large supply of projects with nominally positive net benefits that remained unfunded. They did not understand that in the aggregate this would not make their project look any better in competition with others. I wrote to a Senator from Washington whose pet project was not proposed as a new start pointing out that his project already had a higher benefit-cost ratio than some that were funded. I suggested that he ask the WRC not to emphasize secondary benefits as it was not in his best interest. His staff essentially told me that they would prefer to use their political capital to persuade the relevant appropriation committees to include their project on a piecemeal basis rather and spend any time changing the procedures for project evaluation in general. That’s the bag we’re in.

Some people think that economic thinking is the enemy of environmental and safety values. Systematic analysis is not. Let me illustrate with an experience of sitting in a meeting of the staff of the Secretary of the Army and the Lt. General Chief of Army Engineers and his staff discussing what new projects would be included in the President’s budget (“new starts”). High on the list of priority projects recommended by the Chief was a harbor project in New York City. It barely had positive net benefits, but was justified as being critical to safety and would prevent possible loss of lives from ship

accidents. I had the temerity to ask the Chief if he had a list of all projects that involved saving lives. In other words, where could we get the most life for the dollar? If this was an important value, then we ought to find all the projects that had this product. Of course, he had no such list. The Chief's budget recommendations reflected his perception of the relative power of different members of Congress. Concern for human life was just a piecemeal rationalization, and not the result of any systematic consideration. I repeat, that's the bag we're in. I realize that I could ask these questions as an outsider. This is probably why the Secretary's office sought a visiting professor. He could ask questions and if the reaction was too hot, it could be dismissed as "what could an academic know anyway."

Here is the way the budget game is played. First, after a project analysis is done, the Corps proposes that it be authorized in a yearly Omnibus River and Harbors Act. That just gets the project into a barrel of eligible projects. Next the project must be funded ("new starts") by a separate appropriation subcommittee and Act. While the Corps calculates a benefit-cost ratio, it is never used to actually rank projects and have any influence on what eligible projects are actually funded.¹⁷ The Corps never prepares a list showing the ranking of projects by benefit-cost ratio. I persuaded the Corps staff to prepare such a list as part of the budget process. It was done once,¹⁸ perhaps to humor the professor, and then never repeated.

Every member of Congress pushes for his or her pet project and sees no opportunity cost when a project is authorized and funded. The taxpayer in a district pays the same tax whether they get a project or not. There are some local cost-shares, but they are minimal. A funded project may be a real dog, but the district receives more benefit than if it receives no projects. This leads to what many consider as over-investment in water projects. Presidents are the only politicians that see the total budget and they get little political payoff to another water project, so they tend to reduce the water budget. To indicate the thrust of this process, President Bush vetoed the Omnibus River and Harbor Act in 2007, but Congress voted to over-ride by a huge margin by both parties in both houses.

The Systems Analysis Group thought it had an idea for reforming the budget process that would remind politicians of opportunity costs. At the time I was with SAG, the President's man who oversaw the Corps' civil works budget was the General Council and Special Assistant to the Secretary for Civil Functions, Robert Jordan. He was there because of his general party connections and not because he was championed by water lobbying groups such as the National Waterways Assn. He did not owe his position to any particular water interest group. That gave him a more detached view of the budget than was typical in other Departments with water development agencies. When the SAG suggested that one way to improve the decision process was to establish five-year budget allocations for regions, he bought it and allocations were made for FY 1970-74 (see footnote 16 below). A region would be given a budget, and when a project was funded and the budget used up, there would be no more for that region until the next five years (1969) and (Dola, 1971). That would mean that a member of Congress would be aware

¹⁷ In fairness to the Corps, I know of no agency, including the World Bank, that allocates its budget based on benefit-cost rankings.

¹⁸ *A Water Resource Investment Program, FY 1970-74*, Department of the Army, Corps of Engineers-Civil Works, March 1969.

that if they spent their political capital for a dog, they might not have any chance later for other projects that they considered better. It would make one representative in a region aware that there was a zero-sum game and would make them critical of projects supported by others in their district. Jordan thought that it would be a qualitative improvement in budgeting to put the energy of his office into the regional budget allocations rather than trying to improve the analysis of individual projects. There would be fewer dogs if advocates saw the zero-sum game. The exercise did not last beyond Jordan's departure, and soon Congress ordered that a separate assistant secretary be appointed, thereby increasing water development interest group influence.

National Water Commission

The National Water Commission was authorized in 1968. "In the past a number of study groups (e.g. Hoover Commission) have recommended the unification of the Bureau and the Corps. The Commission sees no significant advantage in this recommendation if its other recommendations are adopted (50). My background paper prepared for the Commission supported that recommendation (Schmid, 1971).¹⁹ It concluded "Negotiation is the name of the governance game and its results are a function not only of organizational charts and assignment of jurisdictions, but also the rules for inter and intra-agency bargaining, agency and clientele bargaining, executive and congressional bargaining and intra-congressional bargaining."

My paper took an agnostic approach to the usual normative studies. "This monograph is intended as a consumer's guide and shopping list for those interested in changing the performance of Federal decision-making in water resources. A consumer's guide doesn't tell the shopper what to buy, but hopefully tells him the consequences of alternative actions." I identified rules for making rules that would favor different interest groups. The monograph emphasized that "There is no employer called the public interest" in spite of the fact that most consultants argue that their recommendations are thus supported. Oh well, they paid me anyway. An agency panel charged with reviewing my paper said "There was general disagreement with Schmid's assertion that the term 'public interest' is meaningless. Such expressions provide useful guidance to the agencies, courts and the public." They failed to give any examples. The panel did add, "In spite of these criticisms there was general feeling that the paper is insightful, provocative and useful dissertation on the many difficulties—particularly behavioral difficulties—in administration and decision making." One of these provocations drew the ire of the New Mexico state engineer with respect to inter-basin transfers. I had said "It might be cheaper for the Federal Treasury to buy the pump irrigated land in the Texas high plains than to bring water from the Mississippi River and compensate Louisiana with enough water projects to obtain their consent."

I asked "How can we get new groups to demand different rules to produce different information, when the formation of these groups is itself a function of the existing rules and information flows?" "A key to the power of various groups is the rules which shape the kind of information available to them. This is particularly true for the interests of latent, diffuse and relatively unorganized groups."

¹⁹ Helen Ingram of the University of Arizona and the author of another background paper for the Commission read my monograph and wrote, "I think it is an excellent paper—to my knowledge the best effort on institutions done for the Commission."

The Commission recommended that non-Federal cost sharing be substantially increased as a way to avoid over-investment in water projects. Along the same line, it recommended an Independent Board of Review to evaluate all projects. I question whether independence is possible or desirable. It presumes that evaluation is wholly a technical question of sound analysis and not inherently requiring political input to settle conflicts of interest. Further, the most independent agency we have is the Federal Reserve Board because it makes its own money and need not ask Congress for funds for its staff.

Transaction cost theory tends to assume that if firms are integrated into one hierarchical firm, the problems of coordination are solved. There is the story of General Eisenhower's transition to the Presidency. Someone predicted that it would be difficult as "he will command and command and little will happen." Command is limited not only in public administration, but also private business. The name of the game is persuasion and negotiation. I explored how alternative administrative structures affected the performance of agrarian development programs using the Comilla project in the former East Pakistan as a case study (Schmid, 1975).

Intellectual Property

The Situation, Structure, and Performance (SSP) framework was put to work in a contract report for the Office of Technology Assessment of the U.S. Congress on a conceptual framework for Congressional thinking on intellectual property (Schmid, 1985b). The interdependencies produced by the inherent character of a good are controlled by different structures that produce different outcomes. I laid out the interdependencies and relevant alternative structures for incompatible use, economies of scale, etc. (Sound familiar?) For example, information once produced is a classic case of a good where the marginal cost of another user is zero. The "fair use doctrine" is a policy structure that mandates that some zero marginal cost users are actually charged zero price. Congress and the courts continue to struggle to define the extent of fair use. Much attention has been given to claims of piracy, but equally important is law that affects distribution.

Marginal cost equal zero goods ($MC=0$) raise problems of duplication. For example, "the Houston School District has their own programmers producing programs equivalent to those already commercially available because the sellers won't give them enough discount for multiple copies. The extra programming resources don't produce anything that was not already available. Here, arguments over the price differentiation policies associate with $MC=0$ goods mean that duplication occurs and the lowest possible production cost is not achieved." Here is an agricultural economist with something to contribute to a wholly different policy area by the use of institutional theory. None of us know what problems we will be working on in the future and thus we need some general purpose theory.

Bio-technology

The 1980 U.S. Supreme Court case of *Diamond v. Chakrabarty* opened the way to patent plants and microorganisms in the same way that machines and chemical recipes are

patented.²⁰ The extension of patents to plants promised to be the basis for private breeding to replace public breeding programs. However, the inherent character of machines and plants create different interdependencies and we can predict that application of the same law will produce a different performance. Between breeders and farmers, seeds are a high exclusion cost good. A farmer can buy once and replant next year without buying again from the seed company. The seed company can sue the farmer, and while it occurs, it is inherently messy and difficult. Biological exclusiveness has proven more effective than legal exclusiveness. Hybrids that do not breed true in the second generation become the breeding method of choice even if from a scientific perspective, open-pollinated methods might be superior. “Issues are raised as to the consequences of increased reliance on private investment to develop new plants and micro-organisms. Variable, evolving, and complex living things present a problem in applying patent laws which may not be able to provide the exclusive property rights necessary to recover private investments. Attempts to provide exclusivity may inadvertently create added costs and affect the choice of breeding method and agricultural technologies, as well as the division of productivity gains between inventors and the public (129) (Schmid, 1985a). My grad assistant Judith Stallman spelled out the implications for research and extension (Stallmann and Schmid, 1987).²¹

Good institutional economics theory can help investigate similar interdependencies in otherwise dissimilar technologies. Seeds and computer operating systems have some interesting parallels (Schmid, 1985c). Both can control access to complementary inputs. The owner of the seed can profit from improvements in non-seed inputs. New varieties would not amount to much if farmers were illiterate and the soil eroded. This may be why new varieties in poor countries do not automatically increase yields. “The genetic components of a plant control access to complementary inputs. The genetic components of a plant are its operating system coded to control the use of inputs like water, nutrients, and cultural practices (139).” This is also the basis of Bill Gates’ fortune wherein application program writers make Microsoft’s operating system more valuable. Few want to write an application for more than one operating system even if another operating system were superior. Once an operating system becomes standard, there is no marginal cost to using it for another application.

Strategic Management

In 1997, the Department initiated a terminal masters program in Agri-business. It was thought that a different kind of economic principles course was needed. My colleague, Chris Peterson and I were asked to teach AEC 800, Foundations of Agricultural Economics. Chris taught a course in strategic management, and it might be thought that we would be an odd couple. Not so. Strategic management (and much of business in general) is not based on the standard theory of the firm whose center piece is calculation of optimal resource allocation where known marginal cost equals marginal revenue.

²⁰ I wanted to see how the old system of plant patents worked in France where the European union for the protection of varieties (UPOV) was developed. I interviewed government and private plant breeders in 1981.

²¹ I joined a team of writers for an extension publication that received a Quality of Communication Award from the American Agricultural Economics Association in 1992. Lechtenberg, V. L. & Schmid, A. A. (1991) Intellectual Property Rights. in Baumgardt, B. & Marshall, M. (Eds.): Purdue University Agricultural Experiment Station.

Strategic management is a kind of non-marginal economics found in institutional economics. Generally, the management problem is how to organize the firm. For example, whether to organize the firm on the basis of geography, product, or function does not lend itself to marginal calculations. Part of this problem is not unlike the subject of my report to the National Water Commission on the organization of Federal water development agencies (see above). Sections of my *Conflict and Cooperation* address the internal organization of firms, bargained vs. administrative transactions, and how firms price products. Chapter 11 is about labor institutions that are a major management problem where the marginal value product of labor can depend on the wage and expression of regard. A section entitled Evolutionary and Competence Based Theory of the Firm begins, “When the best action is not knowable, but has to be invented, an evolving competence theory of the firm is useful.” A discussion of a learning organization follows. This is much more than is addressed by the transaction cost literature.

We used a number of cases as would a course in the business college. There are no deterministic answers resulting from the usual calculations in standard theory of the firm. This is not to say that a firm does not utilize calculations for pieces of the puzzle, but there is no simple overall calculation that lends itself to problem sets and answers found in a standard economics textbook.

The course and this masters program were terminated after two years when the Department decided it did not want to devote the necessary faculty resources at the graduate level and could not compete with other more established departments.

Economic Development

In a very real sense, all of my work is about economic development. (especially see above on evolution of Michigan water law, markets in Eastern Europe and Mali, etc.) All of the market rules that I studied contribute to development and beyond that, whose concept of development counts. That is what makes policy advice for poor countries so difficult. I do not believe that there are simple answers. In a fundamental sense, the application of technology to create wealth may be a historical accident in the same sense that humankind is an accident of the combination of single cell organisms (essentially bacteria with specialized capacities). So many things have to be gotten right (and that is not to say that there are not substitutes). “The debate over whether institutions or some factor such as human capital or health is more important for economic growth is misplaced. Regressing income on institutional variables will not provide an understanding of how institutions affect the presence and particular combination of the factors of production and who captures the benefits thereof. Institutions cannot be effectively measured by some general index of property rights, security, free trade, or regulatory burden. The empirical specification of institutional variables could be improved by categorizing the sources of human interdependence since the formal and informal institutions that affect performance are unique to each source. These categories include goods with high exclusion costs, increasing returns, and non-rival cost functions. Growth and poverty reduction may require selective confiscation of property rights. The alleged tradeoff between efficiency and distribution is poorly conceived (Schmid, 2007c).”

Macroeconomics

Capitalism is much praised, but often poorly conceptualized. Many writers define it as an economy with private ownership and markets. This misses the process of the capitalization of future expected cash flows and the creation of money. The credit system as a locus of power can be seen by a property rights approach to macroeconomics.²² Firms borrow money based on the expectations of the productivity of its assets. Those assets are not only physical plant, but also the whole going concern including cooperating labor. Under present institutions, the returns to leverage are owned only by the corporation's stockholders. Why not also labor? Labor is certainly at risk if the loan fails to be profitable. The success of the loan depends the firm's technology and plant, but also the willing participation of labor. The marginal product of labor is not only a function of human capital, but also willing participation. It is possible to design credit institutions so that labor's contribution is recognized with stock in the new output energized by credit (Schmid, 1984). To ask "why not also labor?" is to be troublesome.

Money is created when banks make loans. They are paid interest for their trouble. But, what trouble is it to make what is essentially a risk free loan to the U. S. government? Congress has given a property right to banks to create money. Why then should it pay banks to do something that it gave the right to do in the first place, and thus create money for its own use? The Federal Reserve could be the nation's bank and make loans without the obligation or pay interest (Schmid, 1982) and (Schmid, 1984). The Fed still has to decide if more money could energize unemployed resources, but zero-interest public debt is no more inflationary than interest paying Treasury bonds. This institutional suggestion is the most radical I have ever made. Perhaps its day will come. (For more on macroeconomics see Schmid, 2004, Ch. 9.) I sent one of my papers on this topic to Robert Heilbroner and received this response: "I finally got the time to read your piece on Broadening Capital Ownership, which I liked very much. I thought its analysis was shrewd and correct—the zero yield public finance part reminded me of Abba Lerner's approach in his book on Functional Finance, which I always admired very much. The trouble with all these plans, as I am sure you would agree, is not their technical or institutional feasibility, but the obstacles of understanding (ideology) that obscure their meaning. Words like debt and deficit, private and public are so loaded with political implications that rational discussion of their merits is very difficult—at least in this highly ideologically 'primitive' capitalism."²³ Kenneth Boulding said in response to my paper, "I certainly agree that budget deficits should not be financed by interest bearing securities. If we are going to have deficits, they should be financed honestly by creating new money without interest."²⁴

The Exit Lecture

When a new professor is appointed at many European universities, the professor makes an inaugural lecture to the university community. Since I missed out on that, I decided at my retirement reception to offer an "Exit Lecture." Its sub-title was, "Institutional Economic Economics As A Way of Thinking." That way of thinking emphasizes

²² The instrumentality of credit combined with social capital group incentives can be seen in the success of Grameen Banks championed by Muhammad Yunus.

²³ Personal letter, November 4, 1984???

²⁴ Personal letter, February 24, 1986

evolution, learning and bounded rationality. I spoke from the outline below that hopefully is meaningful to those who have read this paper so far.

April 14, 2006

The Exit Lecture: Institutional Economics as a Way of Thinking

1. Bounded rationality, evolution and learning.
Change behavior by changing incentives or learning.
2. Behavioral economics
Often sub-conscious, non-calculating & caring.
Frames matter. No “true demand.”
3. Is there any institutional economics theory?
Situation—sources of interdependence.
Structure—relationships among people creating opportunities / exposures.
Performance—who gets what.
Institutional economics is not just a subject matter or policy analysis.
4. Nominations for the scrap heap:
Public goods
Externalities; social cost
Mechanism (we need a biological metaphor)
Free market (*laissez faire* vs. regulation); more or less government
Representative consumer or firm, widgets, & Robinson Crusoe
5. Institutions are not factors of production.
6. Property rights security vs. “selective confiscation” in economic development.
7. Probability, forecasting, imagination, & strategic management
8. Method—econometrics, cases, experiments;
Assumptions vs. observation.
9. Welfare economics, value circularity problem.
Efficiency vs. equity? No. Change rights and distribution and you change prices. The necessity for moral choice.
Without general prescriptions, are economists as valuable as plumbers?
10. Rules for changing rules
Arrow’s impossibility theorem and paradox.
11. World needs some new institutions:
Population settlement
Banking as property rights creation
Agriculture is non-equilibrating industry
This is not the “end of history.”
12. Institutional economists win Nobel Prize (and live longer).
Akerlof, Arrow, Buchanan, Coase, Kahneman, North, Schelling, Simon
13. Institutional economists are trouble makers and disturb minds at rest.
14. It is OK to be a little passionate and angry.
15. Some favorites:
Where’s the blood? Power is unavoidable.
“Freedom for the pike is death for the minnow.”
For most individuals to get what they want often requires collective action.
16. There is a never-ending battle for your mind (in economics as well as politics).
17. “The spirit of liberty is the spirit that is not sure it is right.”

I try to follow Niels Bohr who said, *“Every sentence I utter must be understood not as an affirmation but as a question. Truth is something that we can attempt to doubt, and then perhaps, after much exertion, discover that part of the doubt is unjustified.”*

Power and The Troublesome Economist

An institutional economics workshop was held in my honor at Michigan State University, March 16-17, 2007, thanks to colleagues Nicholas Mercurio and Sandra Batie. Too much of economics pretends that markets are institutions of voluntary action and mutual advantage. If one calls attention to market antecedents where power lies, it is troublesome for received doctrine. This was the theme of my luncheon talk at the workshop where I distributed the following outline:

Conceptions that hide power: (How power is removed from the subject of economics)

- Galbraith nominated: sovereign consumer and sovereign voter.
- Focus on informal institutions and pretend everyone agrees.
- Focus on incomplete contracts and coordination failures.
- ‘With all the terms of a transaction contractually specified, nothing is left for the exercise of power to be about’
- Laissez-faire and Hayek’s fatal conceit. Minimalist State.
- ‘Best response’ theory—in equilibrium
- Confuse voluntary trade or participation with approval of the institutionally given opportunity sets.
- Regard maximum product as known independently of institutions. Physician myth.
- The institutions as mechanism metaphor.

Conceptions that reveal power:

- “Freedom for the pike is death for the minnow.” Ask where’s the blood!
Externalities can be shifted, not eliminated.
- Inescapable need for moral judgment.
- Recognize the “Value Circularity Problem” in the striving for efficiency.
- Maximization depends on the input-output categories given by institutions.

- There are evolving informal rules for changing informal rules.
- They are neither natural nor transcendent, but rather contested social artifacts.
- The institutional problem is not only transaction costs-- how to grease the wheels of commerce to minimize friction, but also *who has the wheels and cart in the first place*.
- If there is human interdependence, there will be something that functions like a state to give order.

To raise power issues is to be troublesome, and hopefully useful.

In my paper prepared for the conference volume (Schmid, 2008a), I reviewed three major recent works in institutional economics by Elinor Ostrom, Samuel Bowles, and Avner Grief. There is much good theory and application here, but I wish they had gone further.

I found elements of themes that characterize my own work in all three authors.

1. Transaction as the unit of observation.
2. Multiple equilibria and institutional diversity even within a given environment;
3. Bounded rationality and learning; attributes of goods matter in affecting institutional impact;
4. Agency and social structure are mutually dependent;
5. Institutions are not well specified unless both formal and informal structures and their multiple levels (nested/overlapping) are included (everyday operational rules and rules for making these rules);
6. Details of historical context matter;
7. Comparative empirical analysis is prized;
8. An evolutionary perspective is useful. (Less emphasis on equilibrium?)
9. The state as well as decentralized processes are sources of rights/institutions and that the processes feedback and influence each other.

I asked, can we eliminate “mechanism” as a metaphor for institutions? Unfortunately, from my view, the non-critical use of efficiency as a criterion to judge institutions and explain their evolution is still found even among institutionalists. It hides power issues. Maybe this is why I feel such a disconnect between what I see on my TV and what I read in the theory books. And, why raising power issues is troublesome and useful.

Retrospective

One of the students in my last class asked me “What did you miss in your early work that you now see to be important?” If I thought about it very long, a long list might emerge. But, one thing that has impressed me lately is the role of identity in institutional change. I wish I had read Manuel Castells, *The Power Of Identity* earlier. I had an insight into the role of identity that grew out of discussing welfare programs with my mother. She had

survived the Great Depression by hard work and sacrifice. Somehow in her mind, government welfare programs cheapened what she had proudly accomplished. When I realized that my arguments for these programs challenged her view of who she was, I stopped arguing with her. I wish I had applied that insight to understand institutional change, or lack thereof.

My personal experience in the economics of administration was limited to government. If there were more days in the year, I would have liked to work in a large corporation or have been involved in a project such as the Harvard study of the long-term success of firms, published as *From Good to Great*.

As an applied economist in a college of agriculture and land grant university, I did take adult education (extension) seriously. I do not regret the time I spent giving talks around the state. I do wonder if I should have concentrated on a few themes where reforms are needed and tried to join others to see if over time we could help people develop some non-marginal changes in institutions. For example, in an earlier period some of my colleagues worked for years to lay the groundwork for school consolidation and tax reform in Michigan. I have a friend who has spent his whole career trying to persuade people to support worker owned firms. I admire such work, but I decided it was not for me. I simply had too many issues that interested me. Still, the question haunts me when I consider these lines from Seamus Heaney:

*I was stretched between contemplation
Of a motionless point
And the command to participate
Actively in history.
'Actively? What do you mean?'*

References

- (1969) Public Works Appropriations for 1970 for Water & Power Resources Development. *Subcommittee of the Committee on Appropriations, 91st Congress, 1st Session*. 1st ed. Washington: U.S. Govt Printing Office.
- Anderson, T. L. (1979) 'Book Review: Property, Power, and Public Choice', *American Journal of Agricultural Economics*: 196.
- Berg, N. (2005) 'Book Review: Conflict and Cooperation', *Journal of Socio-Economics*, 34: 866-70.
- Boulding, K. (1979) 'Book Review: Property, Power and Public Choice', *Journal of Economic Issues*, 13: 783-5.
- Broder, J. M. (1981) 'Citizen Participation on Michigan District Courts', in Samuels, W. J. & Schmid, A. A. (eds.) *Law and Economics: An Institutional Perspective*, Boston: Martinus Nijhoff.
- Broder, J. M. & Schmid, A. A. (1973) The Impact of Michigan's 1969 Lower Court Reorganization on Rural Citizens. *Michigan Farm Economics*, No. 369. East Lansing: Cooperative Extension Service, Michigan State University.
- Broder, J. M. & Schmid, A. A. (1983) 'Public Choice in Local Judicial Systems', *Public Choice*, 4: 7-19.

- Bromley, D. W., Schmid, A. A. & Lord, W. B. (1971) *Public Water Resource Project Planning and Evaluation: Impacts, Incidence and Institutions*. Madison: University of Wisconsin, Center for Resource Policy Studies and Programs.
- Conley, J. (??) "Hungry? Eat an Environmentalist:" From Earth Day to Regulatory Reform. *Department of History, Yale University, Ph.D. Thesis*. Yale.
- Convery, F. J., Schmid, A. A. & Economic and Social Research Institute. (1983) *Policy Aspects of Land-Use Planning in Ireland*, Dublin: Economic and Social Research Institute.
- Dallas, L. L. (2005) *Law and Public Policy: A Socioeconomic Approach*, Durham: Carolina Academic Press.
- Davis, J. B. (2007) 'Book Review: Conflict and Cooperation', *Land Economics*, 82: 280-3.
- Dola, S. (1971) 'The Evolution of Funding Policy', *Water Spectrum, Washington: Army Corps of Engineers*, Fall.
- Field, A. J. (1989) 'Book Review: Property Power and Public Choice (2nd Edition)', *Land Economics*, 65: 186-9.
- Lawson, T. (1997) *Economics and Reality*, London: Routledge.
- Lechtenberg, V. L. & Schmid, A. A. (1991) Intellectual Property Rights. in Baumgardt, B. & Marshall, M. (Eds.): Purdue University Agricultural Experiment Station.
- Mercuro, N. (1989) 'Toward a Comparative Institutional Approach to the Study of Law and Economics', in Mercuro, N. (ed.) *Law and Economics*, Boston: Kluwer.
- Mercuro, N. & Medema, S. G. (1997) *Economics and the Law: From Posner to Post-Modernism*, Princeton, NJ: Princeton University Press.
- Mirowski, P. (1989) *More Heat Than Light: Economics as Social Physics, Physics as Nature's Economics*, Cambridge: Cambridge University Press.
- Payne, J. L. (1991) 'Book Review: Benefit-Cost Analysis: A Political Economy Approach', *Public Choice*, 69: 113-4.
- Potts, J. (2000) *The New Evolutionary Microeconomics*, Cheltenham UK: Edward Elgar.
- Robison, L. & Schmid, A. A. (1991) 'Interpersonal Relationships and Preferences: Evidence and Implications', in Frantz, R. (ed.) *Handbook of Behavioral Economics*, Greenwich CN: JAI Press.
- Samuels, W. J. & Schmid, A. A. (1981) *Law and Economics: An Institutional Perspective*, Hingham, Mass.: M. Nijhoff Pub. Boston.
- Samuels, W. J. & Schmid, A. A. (1997) 'The Concept of Cost in Economics', in Samuels, W. J., Medema, S. & Schmid, A. A. (eds.) *The Economy as a Process of Valuation*, Cheltenham: Elgar.
- Schmid, A. A. (1957) The Soil Bank Program in Rock County. *Special Circular, Vol. 27, No. 3*. Madison, WI: University of Wisconsin Extension Service
- Schmid, A. A. (1958) 'An Appraisal of the Soil Bank in a Corn and Dairy Area of Wisconsin', *Journal of Farm Economics*.
- Schmid, A. A. (1960) *Evolution of Michigan Water Laws: Response to Economic Development*, East Lansing: Michigan Agricultural Experiment Station.
- Schmid, A. A. (1962) 'Water and the Law in Wisconsin', *Wisconsin Magazine of History*, XLV: 203-15.
- Schmid, A. A. (1963) Drain Law for Michigan Landowners. East Lansing MI: Michigan Extension Service, Bulletin E-382.

- Schmid, A. A. (1968) *Converting Land from Rural to Urban Uses*, Washington: Resources for the Future, distributed by Johns Hopkins Press, Baltimore.
- Schmid, A. A. (1969a) Effective Public Policy and the Government Budget: A Uniform Treatment of Public Expenditures and Public Rules in the Analysis and Evaluation of Public Expenditures: The Ppb System, a Compendium of Papers for the Joint Economic Committee of the U.S. Congress, Volume 1, Pp. 579-591.
- Schmid, A. A. (1969b) 'Natural Resources and Growth: Towards a Non-Marginal Political Economics', *American Journal of Agricultural Economics*, 51: 1304-13.
- Schmid, A. A. (1969c) Rural to Urban Land Conversion: The Economics of Non-Marginal Change. *Publication No. AE 69/3*. Guelph, Canada: J.S. McLean Visiting Professor Lecture, University of Guelph, Department of Agricultural Economics.
- Schmid, A. A. (1970) 'Suburban Land Appreciation and Public Policy', *Journal of the American Institute of Planners*, 36: 38-43.
- Schmid, A. A. (1971) Impact of Alternative Federal Decision-Making Structures for Water Resource Development. Washington: National Water Commission. Available from National Technical Information Service, PB 211 441.
- Schmid, A. A. (1975) 'A Research Approach to Institutional Alternatives in the Administration of Agrarian Development Programs', *Agricultural Administration*, 2: 285-305.
- Schmid, A. A. (1976) 'The Economics of Property Rights: A Review Article', *Journal of Economic Issues*, 10: 159-68.
- Schmid, A. A. (1977) 'The Role of Private Property in the History of American Agriculture, 1776-1976: Comment', *American Journal of Agricultural Economics*, 59: 587-89.
- Schmid, A. A. (1978) A Review Of "Philosophic Foundations of Agricultural Economic Thought" By Glenn Johnson. East Lansing: Michigan State University, Dept. Ag Econ. Staff Paper 78-9.
- Schmid, A. A. (1982) 'Symbolic Barriers to Full Employment: The Role of Public Debt', *Journal of Economic Issues*, 16: 281-94.
- Schmid, A. A. (1984) 'Broadening Capital Ownership: The Credit System as a Locus of Power', in Alperovitz, G. & Skurski, R. (eds.) *American Economic Policy: Problems and Prospects*, Notre Dame: University of Notre Dame Press.
- Schmid, A. A. (1985a) 'Biotechnology, Plant Variety Protection, and Changing Property Institutions in Agriculture', *North Central Journal of Agricultural Economics*, 7: 129-38.
- Schmid, A. A. (1985b) A Conceptual Framework for Organizing Observations on Intellectual Property Stakeholders. Washington DC: Office of Technology Assessment, U.S Congress.
- Schmid, A. A. (1985c) 'Intellectual Property Rights in Bio-Technology and Computer Technology', *Zeitschrift fur die gesamte Staatswissenschaft (JITE)*, 141: 127-41.
- Schmid, A. A. (1987) *Property, Power, and Public Choice: An Inquiry into Law and Economics*, New York: Praeger.
- Schmid, A. A. (1989a) *Benefit-Cost Analysis: A Political Economy Approach*, Boulder: Westview Press.

- Schmid, A. A. (1989b) 'Law and Economics: An Institutional Perspective', in Mercurio, N. (ed.) *Law and Economics: Developments, Tensions and Prospects*, Norwell MA: Kluwer.
- Schmid, A. A. (1991) 'Rethinking Cost in Population Settlement Patterns', *Choices*: 39.
- Schmid, A. A. (1992a) *Fondations Juridiques Du Marché: Conséquences Pour L'afrique. Staff Paper 92-28*. East Lansing MI: Michigan State University.
<http://www.msu.edu/user/schmid/juridiqu.htm>.
- Schmid, A. A. (1992b) 'Ideas for a New Nation: Public Choice and the Legal Foundations of a Market Economy', in Csaki, C. (ed.) *Agricultural Restructuring in Southern Africa*: International Association of Agricultural Economists.
- Schmid, A. A. (1992c) 'Legal Foundations of the Market: Implications for the Formerly Socialist Countries of Eastern Europe and Africa', *Journal of Economic Issues*, 26: 707-32.
- Schmid, A. A. (1994a) 'Institutional Law and Economics', *European Journal of Law and Economics*, 1: 33-51.
- Schmid, A. A. (1994b) Property, Power and Politics: Some Methodological Challenges to Understanding Access and Control in Sub-Saharan African Resource Management. in Lund, C. & Marcussen, H. S. (Eds.) *Occasional Paper No. 13*. Roskilde, Denmark: Roskilde University.
- Schmid, A. A. (1994c) 'State and Market When Command Goes Capitalist', in Reisman, D. (ed.) *Economic Thought and Political Theory*, Recent Economic Thought Series. Dordrecht and Boston: Kluwer Academic.
- Schmid, A. A. (1995) 'The Environment and Property Rights Issues', in Bromley, D. W. (ed.) *The Handbook of Environmental Economics*, Cambridge: Blackwell.
- Schmid, A. A. (1996a) 'Mancur Olson, Jr', in Samuels, W. J. (ed.) *American Economists of the Late Twentieth Century*, Cheltenham, U.K.: Elgar; distributed by Ashgate.
- Schmid, A. A. (1996b) 'Robert H. Frank', in Samuels, W. J. (ed.) *American Economists of the Late Twentieth Century*, Cheltenham, U.K.: Elgar; distributed by Ashgate.
- Schmid, A. A. (1997) *Impact of Population Growth and Distribution on Local Government Expenditures in Michigan, 1981-1995*. Detroit: Southeast Michigan Council of Governments.
- Schmid, A. A. (1999a) 'Circular and Cumulative Causation', in O'hara, P. (ed.) *Encyclopedia of Political Economy*, London: Rutledge.
- Schmid, A. A. (1999b) 'Environmental Law and Economics', in Backhaus, J. G. (ed.) *The Elgar Companion to Law and Economics*, Cheltenham: Edward Elgar Publishing.
- Schmid, A. A. (1999c) 'Government, Property, Markets...In That Order...Not Government Versus Markets', in Mercurio, N. & Samuels, W. J. (eds.) *The Fundamental Interrelationships between Government and Property*, Stamford: JAI Press.
- Schmid, A. A. (1999d) 'Notes on Selig Perlman's Course, Capitalism & Socialism, 1956', in Samuels, W. J. (ed.) *Research in the History of Economic Thought and Methodology, Archival Supplement 8*, Stamford CN: JAI Press.
- Schmid, A. A. (2000a) 'Affinity as Social Capital: Its Role in Development', *Journal of Socio-Economics*, 29: 159-71.

- Schmid, A. A. (2000b) 'An Institutional Perspective on Farming Systems Research', in Colin, J. P. & Crawford, E. (eds.) *Research on Agricultural Systems: Accomplishments, Perspectives, and Issues*, Huntington NY: Nova Science.
- Schmid, A. A. (2001) 'The Institutional Economics of Nobel Prize Winners', in Biddle, J., Davis, J. & Medema, S. (eds.) *Economics Broadly Considered*, London: Routledge.
- Schmid, A. A. (2002a) 'All Environmental Policy Instruments Require a Moral Choice as to Whose Interests Count', in Bromley, D. W. & Jouni, P. (eds.) *Economics, Ethics and Environmental Policy: Contested Choices*, Cambridge: Blackwell.
- Schmid, A. A. (2002b) 'Is Social Capital Really Capital?' *Review of Social Economy*, 60: 1-21.
- Schmid, A. A. (2002c) 'Using Motive to Distinguish Social Capital from Its Outputs', *Journal of Economic Issues*, 36: 747-68.
- Schmid, A. A. (2003) 'Review: The New Evolutionary Microeconomics, by Jason Potts', *Economic Record*: 140-2.
- Schmid, A. A. (2004a) *Conflict and Cooperation: Institutional & Behavioral Economics*, Oxford: Blackwell.
- Schmid, A. A. (2004b) 'Economic Analysis and Efficiency in Public Expenditure', in Backhaus, J. G. & Wagner, R. E. (eds.) *Handbook of Public Finance*, Norwell MS: Kluwer.
- Schmid, A. A. (2004c) 'The Spartan School of Institutional Economics at Michigan State University', in Samuels, W. J. (ed.) *Wisconsin 'Government and Business' and the History of Heterodox Economic Thought*, Amsterdam: Elsevier.
- Schmid, A. A. (2007a) 'The Great Depression', in Ritzer, G. (ed.) *Blackwell Encyclopedia of Sociology*, Malden MA: Blackwell.
- Schmid, A. A. (2007b) 'Institutional and Behavioral Economics: Journal Entries for Students and Colleagues', in Samuels, W. J. (ed.) *Documents from the History of Economic Thought, Volume 25-B*, Amsterdam: Elsevier.
- Schmid, A. A. (2007c) 'Variables Institucionales', in Urreita, J. J. J. (ed.) *Evolucionismo Económico, Instituciones Y Sistemas Complejos Adaptativos*: Porrúa SA.
- Schmid, A. A. (2008a) 'Power and the Troublesome Economist: Complementarities among Recent Institutional Theorists', in Mercurio, N. (ed.).
- Schmid, A. A. (2008b) 'John Kenneth Galbraith', in Darity, W. A. (ed.) *International Encyclopedia of the Social Sciences, 2nd Edition*: Macmillan.
- Schmid, A. A. (2008c) 'Lexicographic Preferences', in Darity, W. A. (ed.) *International Encyclopedia of the Social Sciences, 2nd Edition*: Macmillan.
- Schmid, A. A. (2008d) 'Satisficing Behavior', in Darity, W. A. (ed.) *International Encyclopedia of the Social Sciences, 2nd Edition*: Macmillan.
- Schmid, A. A. & Shaffer, J. (1964) 'Marketing in Social Perspective', in Sorenson, V. (ed.) *Agricultural Market Analysis*, East Lansing: Bureau of Business and Economic Research, Michigan State University.
- Schmid, A. A. & Soroko, D. (1997) 'Interest Groups, Selective Incentives, Cleverness, History and Emotion: The Case of the American Soybean Association', *Journal of Economic Behavior and Organization*, 31: 267-85.

- Schmid, A. A. & Thompson, P. (1999) 'Against Mechanism: Methodology for an Evolutionary Economics', *American Journal of Agricultural Economics*, 81: 1160-65.
- Schmid, A. A. & Ward, W. (1970) A Test of Federal Water Project Evaluation Procedures with Emphasis on Regional Income and Environmental Quality, Agricultural Economics Report No. 158. East Lansing: Michigan State University.
- Stallmann, J. I. & Schmid, A. A. (1987) 'Property Rights in Plants: Implications for Biotechnology Research and Extension', *American Journal of Agricultural Economics*, 69: 432-37.
- Swaney, J. A. (1991) 'Review of Benefit-Cost Analysis: A Political Economy Approach', *Land Economics*, 67: 134-8.
- Tool, M. R. (1979) 'Review: Property, Power, and Public Choice', *Journal of Economic Issues*, 13: 743-7.
- Vatn, A. (2005) *Institutions and the Environment*, Cheltenham: Edward Elgar.
- Veljanovski, C. G. (1982) *The New Law-and-Economics: A Research Review*. Oxford: Centre for Legal Studies