Miller Cedar Spartan Spy

Warren J. Samuels and the Institutional Reprieve of the Coase Thoerem

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Abstract

In this article, we will define the Coase theorem in terms of conventional microeconomic theory and criticize the invariant property of the theorem along the lines of the Law & Economic approach of the Spartan Institutional school represented by Warren J. Samuels. We provisionally present a discussion of the Spartan Institutionalist School's historical roots and mention a few of the main figures associated with the school. We will then highlight the 1928 Supreme Court decision in *Millet et al. v. Schoene* to develop a institutional approach to private property and formalize Warren J. Samuels' position that the legal institutions and institutional arrangements are not auxiliary to economic exchange or choice, but rather a fundamental component at its core.

1 Introduction

The Spartan School of Institutional Economics

The Spartan Institutional School or sometimes referred to as the Spartan Group [1] had its roots in the major Institutional Economic figures of University of Wisconson-Madison in the beginning of the 20th century. Specifically, the Spartan School was a group of faculty members from the Economics department and the department of Agricultural Economics at Michigan State University (MSU) who almost all obtained their Ph.D.'s from UW-Madison and were largely influenced by figures like Asher Hobson and John R. Commons among others. Prominent Spartan Figures at the Agricultural Economics department included Henry

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[1]For a more detailed history of the "Spartan Group" or School see Schmid, A. Allan, *Research in the History of Economic Thought and Methodology*, vol. 22-c, pp. 207-243, (2004) Edited by Warren J. Samuels

Larzalere (Ph.D. 1938) and Orion Ulrey (Ph.D. 1934). Noted Economics department faculty of the Spartan School included A. Allan Schmid (Ph.D. 1959) and Warren J. Samuels (Ph.D. 1944).

The members of the Spartan School were critical thinkers that were involved in not only developing and extending institutional thinking but were active participants in supporting and proposing economic reforms and institutional change.[11] Ulrey, for example, who Schmid notes was "a social critic in the tradition of Veblen" became *persona non grata* by the MSU Board of Trustees Chair – largely influenced by the conservative farm organization – since intellectual activism is fraught with *amicis huiusmodi*[2].[11] In the other department, Allan A. Schmid was a critical figure in developing many notable graduate courses that had definite institutional bent and in his book *Conflict and Cooperation*, he aimed to develop institutional economic theory as well as formulating the study of the evolution of institutional change and social processes.[10] The Spartan school was "less apoligia for current institutions as efficient; rather active in imagining and helping others establish them" with a "sense of history of thought"[11]. Warren J. Samuels, no small figure he, was a important contributing member of the Spartan School and produced significant work in the history of economic thought as well as (which will be the focus of the present paper) interesting work in Law & Economics[3].

The Spartan School, however, did not attain much notoriety in the nomenclature of history of economic thought texts. Reasons for this absence[4] may be due to the fluidity and interdisciplinary aspect of the work done at MSU and the isolated nature of their research interests relative to the Salt-Water/Fresh-Water debates that were most fashionable at the time. It may have also been due to the lack of vanity in part by Samuels, since he himself was a prominent scholar of history of economic thought. Of course, it may have also seemed apt to think of the Spartan school as a proper subset of the broader continuation of the Institu-

[2] "With friends like these, who needs enemies."

[3] See [3] in the reference section

[4] Reasons given are current speculations by the author and may be subject of future study.

tionalism of Commons and Veblen. Indeed, Samuels on many instances reemphasizes John R. Commons' point of view that "the scope and structure of individual action is ... a matter of collective action."[8] Institutions, for Samuels as well as Commons, were to be understood properly as "collective action in both control and liberation of individual action" wherein institutional arrangements and environment are ubiquities to market fundamentals[8].

Our aim in this present paper is not to make the case that the Spartan School of Economics should be considered as a distinct school of thought – though that is a worthwhile endeavor. Our aim is to elaborate that aspect of Warren J. Samuels' economic thought on the legal and economic nexus of the economy which captures the Spartan School's overall agenda of critical economic theory in an interesting way. In particular we will approach the conventional view of the Coase theorem[5] in the context of Samuels' analysis of a near century old court case which he described as being a "microcosm" of the economy as a whole[9]. We will formulate Samuels' institutional approach to private property and economic governance to argue that law and institutions are fundamental to the economic process of exchange and conflict. In addition, we will highlight what insights on pareto efficiency in bargaining can be learned by careful consideration of legal and economic process as interrelated subsystems.

2 Coase Theorem

The Role of Institutions and private property

The conventional, economic interpretation[6] of the Coase theorem can be found in all mainstream textbooks. In this section we will first motivate a few points regarding the conventional view from a small set of sources and then illustrate Samuels' position *vis-à-vis* pareto efficiency in the next section.

Loosely defined, the Coase theorem states that if transaction costs are zero and bargaining of externalities can occur between two parties, then with well defined property rights an

[5]We will rely not simply on Coase's own work[2] but the conventional interpretation in micro theory in our proceeding discussion.

[6]We are aware that Ronals H. Coase has argued elswhere that his views have been largely misunderstood and misapplied by the economic profession.

efficient solution to a social problem can be reached that is invariant to initial allocation of property rights – i.e. irrespective of a legal regime. Following MWG[7], "if trade of externalities can occur, then bargaining will lead to an efficient outcome no matter how property rights are allocated."[5] Similarly, Jehle and Rene[8] state that "if one's interest is pareto efficiency, property rights do not matter."[4] The essential assumptions that are needed is well-defined property rights that are enforceable, tradable and the agents that are bargaining have perfect information. The observation, MWG comments, that bargaining can generate an optimal outcome "suggests a connection between externalities and missing markets."[5] And, that the absence of legal institutions to enforce and define property rights may prevent the attainment of social optimality. Let us present formally what is relevant to our discussion.

Consider utility functions $u_1[\phi_1]$ and $u_2[\phi_2]$, where u_i is an increasing function of ϕ_i for $i = 1, 2$ and ϕ_i is a function of an allocation parameter, α and a discrete legal choice variable, Ω_j where $j \in \{1, \ldots, m\}$ is the set of discrete legal or liability/institutional rules (or to use Samuels' terminology: 'institutional arrangements'). Following the usual procedure, our problem becomes:

$$\begin{aligned} \underset{\alpha}{\text{maximize}} \quad & u_1[\phi_1(\alpha, \Omega_j)| \text{ some } j \in \{1, \ldots m\}] \\ \text{subject to} \quad & u_2[\phi_2(\alpha, \Omega_j)] \geq \bar{u}_2 \end{aligned}$$

The solutions to the problem will provide us with the familiar *utility possibility frontier* or the pareto efficient set, $\mathcal{P}$ shown in figure 1. However, note that we must have a given starting point, a from which to draw out the contract curve in a pareto "superior" space (shown as grey area in figure 1) to some point $\delta \in \mathcal{P}$. Therefore, in order to apply the utility possibility frontier in practice we must begin with a starting point (e.g. point a), observe the pareto superior set and then allow bargaining to reach a pareto superior point

[7] see item [5] in references
[8] See item [4] in references.

on the pareto set. The intermediate process of observing the pareto superior set in $u-$space highlights the incompleteness property of pareto efficiency[9]. We can see that there are some pareto efficient points on $\mathcal{P}$ that are also in the pareto superior space, and other points that are not. Those other points, suppose point q in Figure 1, are pareto efficient but not pareto superior. Therefore, we cannot diretly compare a to q even though q is by definition 'efficient'[10]. In addition, the direction of the contract curve in the superior set (whether the move is horizontal or vertical) depends on the direction of payments in the bargaining process which is determined by Ω_j: a vertical movement if the direction of payments is made from individual 2 to individual 1, a horizontal movement if the direction of payments is made from individual 1 to individual 2.

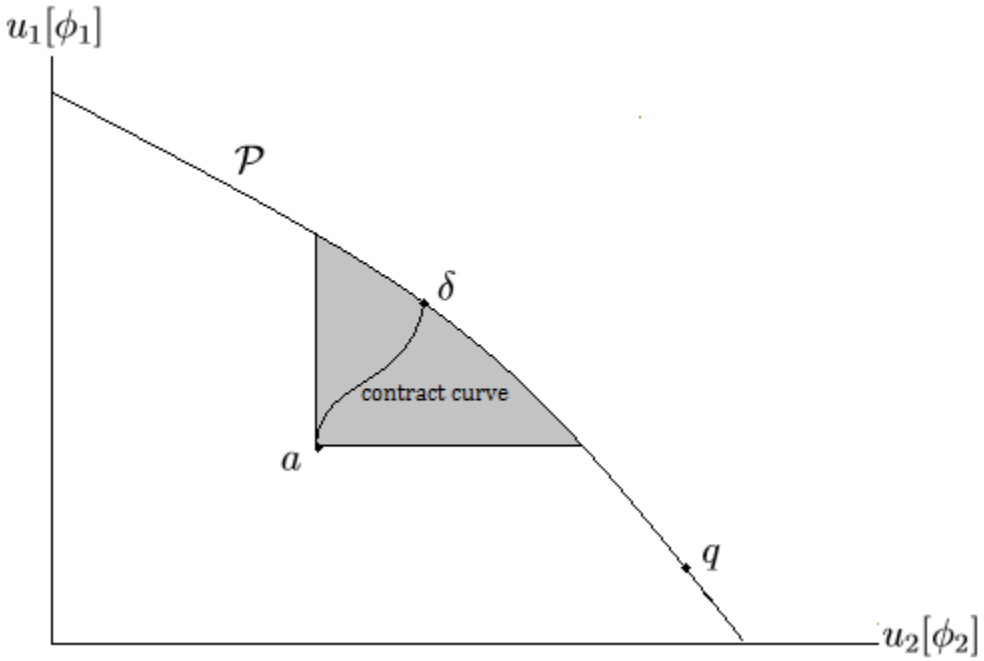

Figure 1:

Thomas J. Miceli's[11] presentation of the same bargaining problem points out that "al-

[9]Note that we are not introducing community indifference curves since we want to simply examine the utilities of the two parties opposed.

[10]A solution to this incompleteness problem has been to adopt the Kaldor-Hicks criteria of wealth maximization in place of pareto criteria.

[11]Miceli is a current Law & Economics scholar that has authored standard texts on the subject and is considerably influencial within the subfield.

though assignment of legal rights does not matter for efficiency in a world of zero transaction costs, the two bargaining scenarios above show that it does matter for the distribution of wealth"[6]. In other words, which direction will payments be transferred. Miceli continues to argue that we should view "assigning legal rights [akin to] moving to a different starting point in the Edgeworth box. Although the market mechanism will still put the parties on the contract curve, their equilibrium wealth levels will be different."[6] Miceli notes that Coase theorem's reciprocal nature of externalities implies that the "peculiar assignment of legal rights in an externality situation is irrelevant with regard to efficiency."[6] In other words, invariant to Ω_j. therefore, though assignment of legal rights effect the direction of bargaining, it is immaterial to the attainment of efficiency.

The invariant property of the Coase theorem discussed above is the subject of our critique à la Samuels. Our aim, in the proceeding discussion is to show that Ω_j is at the core of the economic process and not immaterial. The direction of bargaining is determined by the legal and institutional rules and it is not simply some intermediary process in attaining pareto efficiency.

We attempt in the next section to formalize Samuels' analysis of the legal and economic nexus in the context of adjudication processes of a particular court case. We will use some formal mathematics to assist, not lead our critique of the invariant property of the Coase theorem.

3 Cedar Rust

The Ineluctable Necessity of Choice

The state legislature of Virginia passed a statute in 1914 which empowered the state entomologist to study and if deemed necessary, condemn and destroy the largely ornamental Red Cedar tree if it threatened nearby Apple trees. The plant fungus, known by the proverbial 'Cedar rust' has a two phase life cycle. First, it infects the bark of Red Cedar trees and has no adverse effect on the health of the tree. However, in the second phase of the fun-

gus' life-cycle consists of the transference of hosts from Red Cedars to Apple trees. Once infected, the fungus adversely damages the leaves and fruits of the Apple tree host. The state statute proscribed that upon the written request of "free-holders" (property owners) from any county or magisterial district, the state entomologist can condemn Red Cedars as a public nuisance and have them destroyed under the guise of state police power[9]. The Red Cedar owners, however, unsuccessfully sued to protect their property rights in the courts. The pertinent arguments from *Miller et al. v. Schoene*[12] are presented below:

The Plaintiffs argument:

> The statute is invalid in that it provides for the taking of private property, not for public use, but for the benefit of other private persons.
>
> It seems a wholly untenable view that of two species of valuable property, one may be selected for destruction for the protection of the other from the effects of a disease for whose existence and continuance they are interchangeably responsible.
>
> In no case can property be taken for private use; and the taking of private property for *public* use without due process of law and proper conpensation cannot be justified under the guise of the exercise of the police power.
>
> ... The alleged injury to the apple orchadist "will not justify his shirting damages to his neighbor's shoulder."
>
> We submit that there is not ... any room for the view that one man's property be taken or destroyed, either directly by eminent domain or indirectly ... in order to enhance the property values or the financial prosperity of another[13].[7]

The Plaintiff is making an interesting economic argument. The state, in the plaintiff's view, is not protecting some public interest by enacting the statute; rather it is using its policing power to change the direction of bargaining between two private parties for the benefit of one

[12]Miller et al. v. Schoene, 276 U.S. 272 (1928)

[13]Id. at 273-75. Note: for a more complete reprint of the plaintiffs argument see Samuels and Schmid, 1981.

of the private parties involved. The change of direction noted earlier by Miceli and echoed by Samuels has an effect on the wealth distribution of the two parties. The state, argues the plaintiff, is "enhancing the property values" of the Apple tree owners by directing the injury on the Red Cedar owners. In order to save their property, Red Cedar owners must pay Apple tree owners some financial renumeration to cut down their trees so that the state will not have the basis in which to destroy Red Cedars. While prior to the statute, the Apple tree owners had to pay the Red Cedar owners such payments.

The Supreme court majority opinion against the plaintiff:

> On evidence we may accept the conclusion of the Supreme Court of Appeals that the state was under the necessity of making a choice between the preservation of one class of property and that of the other wherever both existed in dangerous proximity. It would have been non the less a choice if, instead of enacting the present statute, the state, by doing nothing, had permitted serious injury to the apple orchards within its borders to go on unchecked. When forced to such a choice the state does not exceed its constitutional powers by deciding upon the destruction of one class of property in order to save another which, in the judgment of the legislature, is of great value to the public.
>
> It will not do to say that the case is merely one of a conflict of two private interests and that the misfortune of apple growers may not be shifted to cedar owners by ordering the destruction of their property ... For where, as here, the choice is unavoidable, we cannot say that its exercise [police power affecting private property], controlled by considerations of social policy which are not unreasonable, involves any denial of due process[14].[7]

The opinion of the court illuminates two important facts of the economic decision making process. First, that the conflict is not merely a private conflict which makes the state's involvement irrelevant. Any private conflict, in the court's opinion, is made public given the

[14]Id. at 279-280

collective interest involved in any economic process: "the choice is unavoidable". Second, and more subtle, the court affirms the point of view that law and economics are "interacting subsystems or subprocesses" of each other.[9] It is thus non-trivial that Samuels argues *Millet et al. v. Schoene* exemplifies the core institutional idea of the Spartan School that "choices are relative to rights" and that these rights are set directly (through action) or passively (through inaction) by the governing institutions.[9][3]

In the Miller et al. case, the governing institutions had an "ineluctable choice" as to which party's economic interest will be protected and given legal support. This point Samuels takes particular effort to codify in his analysis: "the economy must be seen as an object of legal control and the law as a means of seeking private economic gain or advantage."[9] The institutional arrangements and the legal support of property rights are not an exogenous parameter that can be encompassed or fully captured theoretically as a movement of the initial allocation point, but as samuels states, "apply *mutatis mutandis*, to the decision making process of the economy as a whole"[9]. The conventional view of Coase theorem and the role of institutions to set and enforce property rights is therefore naive. Samuels points out quite rightly that the institutions of private property is not for the protection of property *per se*, but the "protection of certain interests and not others [that] determines what is property."[3] In this case the interest of Apple tree owners over those of the Red Cedars.

To apply this new insight we will present the bargaining process formally. Let ϕ_1 be the quantity of red cedars and u_1 be equal to the present value of the plaintiffs property.

$$u_1 = \frac{u_1[\phi_1]}{1 - \delta_1} \tag{1}$$

In isolation, without consideration of externalities, the utility of the apple orchard owners is equal to the present value of current and all future profits from the apple trees.

$$u_2 = \frac{1}{1-\delta_2} \int_t^{\infty} \pi(p)dp \tag{2}$$

Given the threat of loss to the apple orchards and that the damage from the fungus is equivalent to absolute loss of the utility derived from the profits from the property, bargaining will occur in the direction of the Cedar owners if the following inequality is satisfied:

$$\int_t^{\infty} \pi(p)dp > \eta u[\phi_1], \text{where } \eta = \frac{1-\delta_2}{1-\delta_1} \tag{3}$$

Of course, if the state acts to change the direction of bargaining (the direction of payment), then we have to satisfy the opposite inequality in (3). However, if condition (3) was satisfied then it must be that:

$$\int_{t+1}^{\infty} \pi(p)dp \not\leq \eta u[\phi_1] \tag{4}$$

Therefore, in this situation where the property owners are in such absolute conflict, bargaining is wholly dependent on conditions (3) and (4). From here it is easy to see that facts of nature[15] challenge the invariant property of the coase theorem with regard to the direction of payments. Note that even if we were to inlude some probablity of damage occuring, $w \in (0,1)$ in an expected utility framework we can only alter the fact of nature and not the underlying dilemma. Can pareto efficienty provide some form of resolution to our present case. the question at hand is: what is the optimal level ϕ_1^*, the quantity of Red Cedar trees?

Let's introduce the externality of the Red Cedar on the Apple tree owner as a cost or damage to the Apple owner, $D(\phi_1, p)$ with a probability, w of the damage occurring (i.e. the

[15]The inequality relationship between u_1 & u_2.

transmission of the cedar rust). Therefore, u_2 becomes:

$$\frac{1}{1-\delta_2}\int_t^{\infty}\pi(p)dp - wD(\phi_1,p) \tag{5}$$

Assuming that D is both linear[16] in p and ϕ_1 and D'_{ϕ_1} and D'_p are positive[17], then the socially efficient ϕ_1^* is given by the first order condition[18]:

$$\frac{\pi(p)}{1-\delta_1} + wD'_{\phi_1}(\phi_1,p) = \phi_1^* \tag{6}$$

the above result shows that the socially efficient quantity of Red Cedar trees are not zero. Given that the probability w and the profit function are nonnegative, bargaining in the absence of or with some Ω_j effecting the direction of payments must yield some positive ϕ_1. However, the nature of this particular case already established that if bargaining occurs and satisfying inequality conditions (3) and (4) then the null result, $\phi_1^* = 0$ is possible (see figure 2). This is not satisfied in the first order condition (6) and becomes an unanswered problem. The invariant property in the conventional view of the Coase theorem implies that there is no Ω_j which yields $\phi_1^* = 0$ and therefore is non-applicable. What this means is that we can't resolve conflict in alignment with public and private interests without the legal, the state or the governing institutions.

Our formulation of Samuels analysis parallels a general point made by Baumol that the pareto criteria sidesteps conflict. It deals "only with cases where no one is harmed so that the problem does not arise."[1] For cases of conflict between two private parties, pareto efficiency of bargaining is not conclusive, it is "contingent, and relative"[3] existing before and after any state action and institutional change in arrangement and institutional

[16]The assumption of linearity simplifies the result and considered here as convenience.

[17] $\frac{\partial D(\phi_1,p)}{\partial p}$ and $\frac{\partial D(\phi_1,p)}{\partial \phi_1}$ being positive simply means that damage is more costly to the Apple owner if either the value of the property increases and that through w increases in ϕ_1 also increase loss (or threat of loss)

[18]We are inferring that $wD'_p(\phi_1,p) = \phi_1^*$ since D is linear in p and the product of the remaining constant and probability of damage, w is immaterial to the argument.

environment.[9][3] It exists "before and after any change in the structure of advantage and disadvantage" and therefore meaningless without a proper study of institutional governance and legal processes.[3]

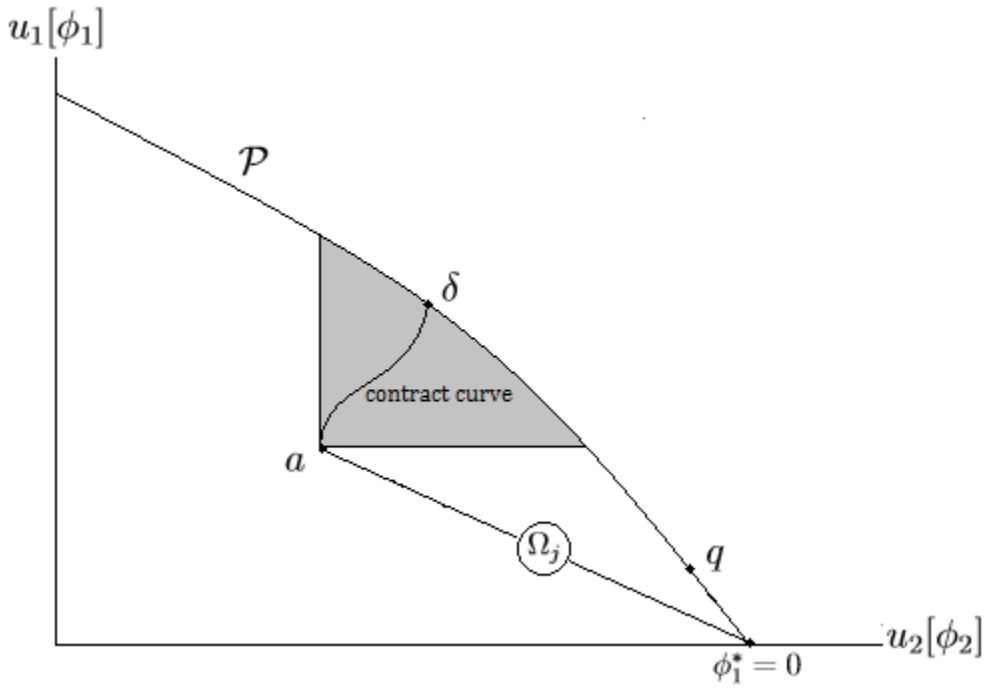

Figure 2:

4 Conclusion

Economic science has for so long used the market process as *prima facie* starting point and fundamental basis of exchange. Preferences were the exogenous king that glued the fabric of choice. The legal processes and institutional arrangements have largely been secondary with scholars placing different levels of significance on this secondary process. Our review of Samuel's and the application of the *Miller et al. v. Schoene* supreme court case contends otherwise.

Choice begins with bounds. We are provided rules set by the governing institutions and the prevailing laws that either coerce or dictate the economic process to differential interests.

The legal and economic processes' are ubiquitous with respect to each other and condition social solutions to inter-agent conflict as shown in the change from figure 1 to figure 2 in the preceding sections. To proceed, as Miceli and other Law & Economics scholars do, and interpret the legal process as simply changing the position of our starting point in order to convince ourselves the conditional outcome is the result of some exchange process misses the point entirely. The institutional arrangement in the above case essentially dictated the outcome. This dictation thus introduces elements of power and coercion that the pareto efficient bargaining process was shown to be void.

We have attempted to show pareto efficiency is, from the Spartan institutional standpoint, empty in addressing any meaningful conflict as was the case in *Miller et al. v. Schoene*. The conventional interpretation of the Coase theorem was partially demonstrated to be naive and that invariant property to be a rather unfounded leading concept.

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