

Reconciling Coase and Buchanan on the Coase Theorem

by

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The Coase theorem states that in the world of zero transaction costs, utilization of resources will be efficient regardless of how property rights are assigned initially. Buchanan criticizes the zero-transaction-costs qualifier and emphasizes that as long as transactions are agreed upon through free and open processes, then the results are efficient. This paper analyzes the implications of Buchanan's critique, indicates its potential problems, and then attempts to reconcile his view with that of Coase. It is argued that the delicate relationship between objective and subjective values constitutes the link between Coase and Buchanan. (JEL: B 31, B 41)

1 Introduction

Imagine many individuals located on separate, isolated islands and living by themselves. In this world of Crusoes, are there any economic problems? In a sense, of course there still are. The Crusoes of the world have to determine how to use their time, energy, and wisdom to solve the problems of production, consumption, and savings. The study of how they deal with these problems is interesting; however, it is of limited significance. Since the Crusoes are isolated individuals, each forming a small self-sustaining system, there are no interactions or trade between and among them. Thus, there will be no organizations or institutions, and neither specialization nor division of labor can occur. This world of Crusoes can hardly be said to be a human society.

In contrast, in an ordinary, normal society, each person maintains numerous relationships with others. From the time a person is born, he begins to interact with others. Initially, he lives with his parents and relatives; as he grows and receives education, he deals with his teachers and friends; and as he becomes employed, he works with his colleagues. Afterwards, he may form his own family and raise

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another generation. In all of these interactions between him and the other people, there is the implicit element of exchange. An exchange implies giving and receiving. What is given or received may be materials or emotional resources, or a combination of both. The parties of an exchange may be on equal or unequal footings. In addition, the exchange relationship also has a time dimension: it may be a single incident, a lifelong relationship, or anything in between.

In a narrow sense, economics deals with those exchanges that involve money. Exchanges that use money as a medium are often called (monetary) *transactions*. Economists have developed a set of analytical concepts to study transactions and related problems. To focus all attention on these transactions, however, is somewhat restrictive. Since a person's interaction with others contains elements of both giving and receiving, and since monetary transactions constitute only a small part of the numerous interactions, why would economists not make their inquiry of human behavior more general? It is perhaps because of this awareness that for the past several decades economists have gone beyond the traditional boundaries of economics and used their analytical tools to study political, social, and legal issues (BUCHANAN AND TULLOCK [1962], BECKER [1976], POSNER [1998], and COASE [1960]). This development has not only enriched economics but also deepened our understanding of human behavior. Given this background, this paper aims at exploring a fundamental issue concerning the human actor in economics.

Specifically, since the publication of COASE [1960], the Coase theorem has profoundly influenced economics as well as legal studies. The modern study of law and economics arguably was launched as a result.¹ The famous theorem, however, has also generated heated discussions.

Buchanan wrote two papers to discuss the Coase theorem. In the first paper, BUCHANAN [1973] accepted the Coasian argument and extended it to examining the role of government. In the second paper, BUCHANAN [1984] suggested that he was simply clarifying the theorem's ambiguity. In fact, however, he made a full-fledged attack and challenged the Coase theorem in a fundamental way.² In particular, as commonly understood, the Coase theorem stipulates that when transaction costs are absent, regardless of how property rights are assigned initially, resources will be utilized in the most efficient way. Furthermore, the Coase theorem uses the price mechanism as the criterion for efficiency. Buchanan opposes this interpretation of efficiency. He believes that values are determined subjectively by individuals, therefore market prices cannot be used as the criterion for efficiency. If transactions are accomplished through *free and open* exchange processes, then the ensuing results are efficient; the transaction-cost qualifier is irrelevant. Moreover, the focus

¹ The social-cost paper, in addition to giving birth to the famous Coase theorem, is also known for Coase's insight that a tort is reciprocal in nature.

² In addition to these two papers, Buchanan has written several papers dealing with the externality issue; see, for example, BUCHANAN AND STUBBLEBINE [1962]. It should be noted that his second paper on the Coase theorem is an important essay and has been included in at least two of Buchanan's selections; see BUCHANAN [1986], [1987a].

of attention should be shifted from the outcome of a transaction to the rule of the transaction. He argues that it is more important to choose the efficient rule.

Buchanan's emphasis on subjective values illustrates the importance of the contracting parties, as all of the relevant considerations are eventually made by the individuals involved. It can be argued that there is a metric, or a scale, in each individual's heart. The metric is marked with different readings, or magnitudes, of various values, and the individual reads the markings for reference in making decisions. In contrast, the Coase theorem implies the existence of a metric, or a scale, of the market, with prices and measurements of efficiency constituting the markings of the metric. The metric of the heart³ is subjective and nonobservable, while the metric of the market is objective and observable. As will be argued below, by using the concepts of the metric of the heart and the metric of the market, the contrast between Buchanan and Coase can be illustrated. Moreover, the two concepts can be employed to discuss the relationship between objective values and subjective values as well as the normative issues involved.

It is well known that Coase's social-cost paper has been used as a springboard for numerous discussions on the Coase theorem as well as on the concept of transaction costs, and these discussions have followed different lines of development.⁴ In the present paper, I attempt to advance one such development of the Coase theorem, and the inquiry is meaningful for several reasons. To begin with, both Coase and Buchanan are important twentieth-century economists who have made path-breaking contributions. Thus, an examination of an issue about which they tend to disagree, or at least have disagreed, is intellectually interesting in itself for the history of economic thought. In addition, the Coase theorem contains deep insights into human behavior and economic activities. Clarifying the viewpoints of these two Nobel laureates on the Coase theorem and providing a possible link between their views promise to enhance our understanding of the theorem as well as the nature of human behavior. Moreover, as indicated above and explored further below, Buchanan's critique of the Coase theorem is related to the concept of efficiency. Since efficiency is a core concept in economic analysis, studying the Coase theorem by focusing on the efficiency issue is likely to deepen our perception of this important concept. Finally, the Coase theorem is an insightful proposition about resource utilization in the market process, and Buchanan's critique enriches its content by emphasizing the subjective nature of values. But the Coase theorem can certainly be interpreted from an even wider angle. Since individuals are the principal actors in

³ The term "metric of the heart" seems odd, but it is not without precedent. For instance, Riker states that "As Rousseau contended, it is in the end the law that is written in the hearts of the people that counts" (quoted by NORTH [1990, p. 60]). In addition, KURAN [1995, p. 7] quotes a verse in the Qur'an: "Whether ye conceal what is in your hearts or reveal it, Allah knows it."

⁴ COASE [1988a] shows reservations towards economists' fascination with the Coase theorem and the world of zero transaction costs; he indicates that the central message of his social-cost paper is a call for studying the real world – the world of positive transaction costs. For an insightful review of the social-cost paper and the Coase theorem, see ZERBE [1980].

collecting, assembling, and allocating material as well as emotional resources, the metrics of the heart will affect the ultimate utilization of these resources. The Coase theorem implies that transaction costs should be minimized in assigning property rights; what is its implication for the metric of the heart? Can we draw a similar insight from the Coase theorem? These are intellectually challenging issues that will be explored in the following analysis.

The paper is organized as follows. In the next section, I will present a brief review of the famous Coase theorem. Then, in Section 3, I will introduce Buchanan's critique of the theorem and illustrate the major insights of the critique. Subsequently, a reconciliation between Coase and Buchanan's views of the Coase theorem is established in Section 4. The final section then concludes the paper.

2 Review of the Coase Theorem

In this section, I will first provide a brief description of the background of the Coase theorem, and then explain Stigler's interpretation of the theorem. Afterwards, I will specify the unanswered issues that lead to Buchanan's critique.

2.1 Background

Generally speaking, when an individual's activity exerts an influence on others, an externality is created. Externality is a neutral term; it may imply positive or negative influence. When an economic activity produces a negative externality, traditional welfare economics, as represented by Pigou, suggested that government should step in and use punitive taxes to correct the negative externality. The typical example is an upstream factory producing pollution that harms the downstream factory. The downstream factory's loss is a form of social cost, but the upstream factory will not take this cost into account in making its own production decisions. Therefore, by taxing the upstream factory, society can force it to face the social cost its pollution incurs. The function of the tax is to make the social cost become part of the private cost. In so doing, the externality will be internalized and resources will then be utilized efficiently from the society's viewpoint.

Coase thought otherwise, however. He argued that with well-defined property rights, regardless of how property rights are assigned initially, resources will be used in the most efficient way. The immediate implication of this proposition is that when externality is present, the parties affected can often negotiate on their own to resolve the conflict, and therefore the government need not step in. However, the government must ensure that property rights are well defined.

2.2 An Alternative Interpretation

STIGLER [1989] has an interesting interpretation of the Coase theorem. He argues that the world of zero transaction costs is the world in which the individual who generates the externality is also the very same person being affected by it. In that case

the individual does not have to negotiate with other parties, and making decisions within oneself in essence does not incur any transaction costs. Moreover, since the individual will take into account the externality generated, he will therefore make the best judgment by taking into consideration all the pros and cons. Consequently, resource utilization will be efficient. For instance, if the upstream factory and the downstream factory are owned by the same person, then in determining the amount of pollutants to be released from the upstream factory, the owner will certainly consider the impact on the downstream factory. Similarly, if the cattle ranch and the farm are both owned by the same person, he will surely make the best decision with respect to the number of cattle and the area of the land for crops.⁵

The interpretation of the world of zero transaction costs by Stigler is ingenious; it does help to illustrate an important aspect of the Coase theorem. Moreover, Stigler's story provides an operational basis, at least conceptually, to derive policy and normative implications from the Coase theorem. To focus on the latter issue, one can examine two aspects of the Coase theorem: the efficiency problem and the externality problem.

To begin with, the efficiency issue is best explained by an example. Consider the case that there are two individuals and one unit of productive resource. The individuals, A and B, have different skills. If A owns the productive factor, he can turn it into a product that can be sold for \$150. If B owns the productive factor, his product, possibly of a different nature, can fetch \$100. Now think about the assignment of property rights. If the productive factor is assigned to A, then the resource will obviously be utilized efficiently. If the unit is assigned to B, however, there is a potential gain of \$50 that can be realized. Specifically, if the unit is transferred to A, who carries out the production, then there will be an extra \$50 to be divided between A and B. Even though it is not clear how the increment of \$50 will be divided eventually, the transfer from B to A of the productive factor means that it has moved to the most valuable destination, in this case A. When there are no transaction costs, the transfer from B to A will be accomplished. Therefore, as far as efficiency is concerned, the Coase theorem implies that in the world of zero transaction costs, regardless how property rights are assigned initially, resources will flow to their most valued destination.

That said, however, it is to be noticed also that in the real world where transaction costs are not zero, resources do not necessarily flow to the most valuable destination. There are various potentially realizable gains that go unexploited, and there are countless inefficient resource allocations that remain uncorrected.⁶ Upstream factories do pollute downstream factories, cattle do go astray in and destroy crops,

⁵ The legal term for Stigler's interpretation is the *single-owner test*, and was first introduced in BAXTER AND ALTREE [1972]. But the conceptual device is not without its weaknesses; for an extended analysis that relates Coase's single-owner test to Buchanan's veil of uncertainty, see HSIUNG [2000]. In addition, for an analysis of whether there is a generalized Coase theorem, see HSIUNG [2002].

⁶ See LIBECAP [1989] for examples of unexploited potential gains that are caused by common-pool problems.

and human beings do cause (negative) externalities, all without compensation of any form. BINMORE, RUBINSTEIN, AND WOLINSKY [1986] argued that if the bargaining parties know each other's preferences, as reflected by their respective discount rates, then an instant resolution of the dispute is possible. An interesting question that remains unanswered, nevertheless, is how the discount rates are formed.

Consider now the externality aspect of the Coase theorem. As indicated above, the immediate policy implication of the Coase theorem is very clear: When an externality is present in the real world, the parties involved may be able to solve the problem by themselves; the government does not have to step in. In addition to this, however, rich implications can be derived by using the Coasian world as a reference point. Since, in the world of zero transaction costs, resources will be utilized in the most efficient manner, the Coase theorem implies that transaction costs should be reduced, so that resource utilization can be more efficient.⁷ There are numerous ways to reduce transaction costs when an externality becomes a potential problem; proper assignment of property rights and adopting appropriate procedures to resolve disputes are two examples.⁸

Think of the assignment of property rights first. If the statutory law or accepted custom clearly defines property rights, then when an externality appears, the parties involved will know exactly what their respective rights are. As a result, potential disputes can be avoided or resolved easily once they do arise. For instance, if the law specifically stipulates that residents have the right to have a quiet environment after midnight, then the residents are not likely to make noise and disturb their neighbors. If and when noise does arise, the one making the noise will be more likely to reduce it upon being protested against by the neighbors. In addition, the neighbors will be more likely to protest when the rights are clearly defined.

Consider next the procedure of dispute resolution. As the assignment of property rights is often not well defined, disputes do arise as a result of the externality generated. When a dispute occurs, if the procedure for resolving the dispute is effective, then less resources will be absorbed. For instance, in a case concerning a copyright or patent, whether a right has been infringed has to be determined. If the legal system, or an accepted arbitration procedure, can resolve the dispute quickly, then transaction costs are clearly reduced and resources will be used more efficiently.

By clearly specifying the assignment of property rights and by offering efficient procedures to resolve possible disputes, transaction costs are reduced. This is fairly clear; a more important question remains unanswered, however. Since different assignments of property rights and different procedures of resolving disputes imply not only different amounts of transaction costs but also different resource allocations, how do we choose the best property rights assignment and the best dispute settlement

⁷ That transaction costs should be reduced is generally accepted to be a policy implication of the Coase theorem (ZERBE [1980], MEDEMA [1994]), but it should be noted, as pointed out by a referee, that it is costly to do so.

⁸ See FURUBOTN AND PEJOVICH [1972] and POSNER [1990], [1998] for analyses of the relationship between property-right assignment and economic behavior.

procedure? Alternatively put, since the assignment and the protection of property rights inevitably incur costs, and since the final allocation of the resources generates various values, therefore the Coase theorem can be seen as a unique articulation of cost–benefit analysis. The aim of property-right assignment and its protection is thus to make the net benefit as large as possible.⁹ Conceptually speaking, this is an obvious goal, but certain questions naturally arise: How are the costs to be measured? And who is to do the measuring? These questions touch the heart of the Coase theorem, and arguably they are the starting point of Buchanan’s critique.

3 Buchanan’s Critique

In this section, I will first outline Buchanan’s initial support of the Coase theorem, and then discuss his forceful critique and its major insights. Afterwards, I will raise issues with Buchanan’s critique.

3.1 Background

There are two papers by Buchanan that deal with the Coase theorem directly. In the first article, “The Coase Theorem and the Theory of the State,” BUCHANAN [1973] agrees with the Coase theorem and extends it to analyzing the political process. Simply put, his major point is this: In the world of zero transaction costs, the form of the government, as represented by the decision rule adopted, is inconsequential, and utilization of resources in the political process will always be efficient.

It is interesting to note that this proposition in essence echoes the argument made by BUCHANAN AND TULLOCK [1962] in their classic, *The Calculus of Consent*. Specifically, in analyzing decision rules, they argue that if side payments are allowed, then whether the voting rule is by unanimous decision or by majority decision does not make any difference, for the final outcome will always be efficient. Take the case of a vote by three individuals as an example. Consider that a certain public expenditure will result in an impact of (1, 1, –3) for the group. To simplify analysis, assume that the cost of the project is zero. If no side payments are allowed, then a majority rule will lead to the project being passed. From the society’s point of view, however, the outcome is not efficient, since the net gain from the project is –1. When side payments are allowed, the situation will become drastically different. Under a majority rule, the third individual can bribe the first two by paying them, say 1.2 each, or bribe only one of the first two, then the project will not be passed and the outcome will become efficient. In fact, with side payments, even one-person rule, i.e., a dictator making all the decisions, will not change the outcome. For instance, if the first individual is a dictator, then the third individual can still pay him enough

⁹ This point is not only made towards the end of COASE [1960], it can also be said to be the major message conveyed by him in his Nobel speech, where he argues that the institutional structure of production should be carefully studied, so that the transaction costs involved in economic activities can be reduced; see COASE [1992].

so that he will not pass the proposal. Therefore, if side payments are allowed, then regardless of the voting rules adopted, the final outcome will be efficient. This is essentially parallel to the Coase theorem in that when transaction costs are absent, resource utilization will be efficient, regardless of the initial property-right assignment.

Buchanan's interesting application of the Coase theorem to analyze the political process shows vividly the wide implications of the theorem. In the second paper, however, BUCHANAN [1984] makes a fundamental critique of the Coase theorem.

3.2 *The Critique*

Buchanan believes that previous discussions of the Coase theorem have been based on *objective values*, with the implicit assumption that whether resource utilization is efficient or not can be measured by an objective standard. If a bystander has all the relevant market prices for reference, then he can make a judgment as to whether resources have been utilized efficiently or not. In the example of the upstream factory polluting the downstream factory, if the prices of the products from both factories, the harms generated, and the prices of pollution prevention devices are all known, then an objective judgment can be made concerning the optimal amount of pollution as well as the optimal outputs for both factories. Buchanan opposes this, however. He believes that all values are subjectively determined, and that only the parties involved can make the relevant judgment.¹⁰ If the parties affected by an externality negotiate with each other through a *free and open* exchange process, then any resource utilization under the voluntary agreement is efficient. Specifically, BUCHANAN [1984], [1987a, p. 160] states that, "given this institutional setting, any outcomes attained under free and open exchange processes are to be classified as efficient." Moreover, since values are subjective, different people may make different decisions even under the same circumstances, and consequently there may be different outcomes. Nevertheless, all such outcomes are efficient. In the above example, as long as the upstream factory and the downstream factory reach an agreement without coercion, then the final outcome is efficient. Transaction costs are irrelevant.

If values are subjective and any resource utilization based on agreement is efficient, then does that imply that all resource utilizations are equally efficient? What then is an inefficient resource utilization? Buchanan does not respond directly to these doubts that naturally arise, but shifts his attention to a higher level. He believes that there are two elements in any transaction: the rule of the transaction and the outcome of the transaction. Bidding, bargaining, lottery drawing, etc., are rules

¹⁰ Buchanan is a subjectivist, and he stresses the subjectivism of plans and intentions (BUCHANAN [1969]). Likewise, he has repeatedly emphasized that values, moral and otherwise, are ultimately determined subjectively (BUCHANAN [1987a]). For a critique of the Coase theorem from the perspective of the first interpretation of Buchanan's subjectivism, see CORDATO [1992]; for a critique of Cordato's critique, see GUNNING [2000].

of transactions; the final result under any given rule is the outcome of a transaction. The transaction rule and the outcome are interdependent. Resource utilization might be different under different rules. The focus of attention should be the rules, he believes. In particular, BUCHANAN [1984], [1987a, pp. 156f.] argues that “The agreement test for efficiency may be elevated or moved upward to the stage of institutions or rules, as such.” Therefore, the parties affected by an externality should try to find out the most efficient rule and then resolve the potential problem under the rule. Efficient, or good, rules are those that are willingly accepted by the parties involved. It is obvious that the parties are more likely to agree on the rule before the externality has occurred. For this reason, Buchanan has relied on the device of the *veil of uncertainty* to analyze the choice of rules. For example, earmarked taxes may be purposely adopted at the constitutional stage to ensure a certain level of public services.¹¹

There are therefore two levels of efficiency: the rule and the outcome.¹² Since both the rule and the outcome are subjectively perceived, the criteria for efficiency are selected by the parties involved themselves. If the relevant parties adopt the rule through free and open processes, then the rule adopted is efficient. Similarly, if the parties choose freely under the rule, then the resulting outcome will also be efficient. Of course, different individuals may choose different rules and as a result could reach different outcomes. But as long as the negotiations satisfy the condition of being conducted through free and open exchange processes, the rule chosen and the resulting outcome are both efficient.¹³

3.3 Contributions

The Coase theorem holds with the proviso that transaction costs are absent; Buchanan believes that the proviso is irrelevant. Transaction costs inevitably exist, but so long as the transaction is based on voluntary agreement, the result is efficient. The important thing is to study different rules of transaction, so that the parties involved will be able to find the best rule for themselves.

In addition to pointing out the difference between the rule of a transaction and the outcome of a transaction, Buchanan’s critique contains two significant implications. First, Buchanan clearly illustrates the blind spot of the Coase theorem concerning

¹¹ For a discussion of this and related issues, see HSIUNG [2001a].

¹² A second referee points out that even though Coase emphasizes in his major writings (e.g., COASE [1960], [1992]) that economists should study the institutional structure of economic activities, he has never separated the two levels of *choice of rules* and *choice within rules*. Therefore, in Buchanan’s view, Coase may *not* be an institutional economist. This raises a challenging question: Is Coase really an institutional economist? In a rough, first-order analysis, a comparison of COASE [1988a], [1988b] and NORTH [1990] shows that while Coase does not have an institutional theory, at least not explicitly, North has developed one.

¹³ This is because BUCHANAN [1984], [1987a, p. 157] argues that “The discussion and agreement on the change in the rules here is analogous to the trade that takes place between ordinary traders in the simple exchanges made under postulated rules.”

the point of reference. That is, previous discussions tend to assume implicitly that the price system can be used as the reference, and the only problem is that a competitive market may not exist.¹⁴ Buchanan argues otherwise. He believes that values are subjective and that only the individuals can determine the relevant values for themselves. This implies that, for an individual, the prices appearing in the market constitute possibly only a small part of the materials he draws on to make decisions, for other, nonmarket factors may also be relevant, and often important, reference materials. Since only the individuals themselves know exactly what materials are relevant for reference and to what degree, there does not exist any objective standard by which others can independently judge whether resource utilization is efficient or not. More importantly, even though market prices offer concrete materials for reference, the prices are implicitly supported by the judgments of market participants. The price system cannot be formed in a vacuum, and neither can it be separated from the human actors. Therefore, the objectivity of the prices has its potential limit.

The second important insight of Buchanan's critique is his emphasis on the human factor. In the statement of the Coase theorem as commonly accepted, the only part that vaguely relates to the human beings is the phrase "regardless of how property rights are assigned." But even this phrase seems to be meant to eliminate the human factor. That is, regardless of which party is given the property right initially, the result will be the same. And this tendency is aggravated by the example often used to illustrate the Coase theorem – the externality issue between the upstream factory and the downstream factory – for business entities are generally assumed to conduct their business by relying only on the price signals in the market. Therefore, the human actors seem to be eliminated entirely, and the Coase theorem becomes almost like a law in the natural sciences, objectively true and having nothing to do with human beings. Actually, in some quarters this seems to be viewed as a strength of the Coase theorem. For instance, MEDEMA [1999, p. 217] argues that "A second implication of the Coase theorem is that externalities will be resolved efficiently not only through an assignment of rights, but *regardless of to whom* these rights are initially assigned" (emphasis original). But Buchanan's critique recovers the human factor that is almost invisible in the Coase theorem, as discussion of the efficiency of interpersonal interactions has to be related to the human actors. Furthermore, in analyzing problems of human behavior, if the focus is placed on certain seemingly objective concepts, then the discussion can easily become illusory and can even end up empty.

3.4 Challenges to the Critique

Buchanan's critique brings new insights to the understanding of the Coase theorem: Efficiency cannot simply be determined by relying on objective standards, for effi-

¹⁴ It is true that Pareto optimality is defined without referring to market prices, but Coase's claim "[to] maximize the value of social production" and subsequent discussions do rely on monetary prices.

ciency is related to subjective values as perceived by human beings. Also, efficiency goes beyond the final outcome, and the determination of the rules is equally, if not more, important.

Buchanan's analysis, however, is not without its own weaknesses. The problems can be seen from several different angles. First, as the focus is shifted from the final outcome to the rule of transaction, the whole picture of the transaction problem becomes clearer. But when attention is concentrated on the rule of transaction, the efficiency problem resurfaces, as it is now the problem of choosing the *efficient rule*. Among numerous possible rules, which one is to be chosen? Since there are no objective standards to determine the relative merit of the rules, how does one make a subjective judgment? If the parties involved have different perceptions about the rules and cannot reach any agreement, can it be said that a deadlock is efficient? Are there more persuasive explanations? Moreover, in discussing the choice of rules, should there not be some prerequisite conditions? Should not the parties be using a common language and have some common interpretation of the language used? For otherwise, how can a discussion be carried out? If a common interpretation of the language used is necessary, does it not indirectly imply that, at least for the parties involved, the common language is *objective* and is accepted by the parties involved?¹⁵ Furthermore, Buchanan believes that regardless of the particular transaction rule adopted and the final outcome that actually results, as long as agreement is reached by individuals through free and open processes, both the rule and the outcome are efficient. But what do we mean by *free and open* processes? Is it determined by a third-party observer or by the parties themselves? Is it not true that Buchanan is counting on the consensus (i.e., objectively shared attitudes) of economists that *free and equal* processes are a meaningful criterion of efficiency? Alternatively, if some of the parties believe that the parties involved are not facing free and open processes but nevertheless agree to continue the negotiation, is it not true that agreeing to continue the negotiation in itself signifies an improvement in efficiency?

Finally, a major insight of the Coase theorem is that, in assigning property rights and designing the relevant institutions, one should try to reduce the potential transaction costs. This contains strong policy implications for the legal system and the administrative institutions in defining new property rights or in resolving disputes. In contrast, Buchanan's interpretation of the Coase theorem does not seem to have clear policy implications. Since values are subjectively determined and therefore the individuals' judgments are to be respected, there does not seem to be any room for improvement. But, if the individuals' subjective judgments can somehow be influenced and modified so that the individuals can make better judgments in choosing

¹⁵ A referee points out that Buchanan is not a utilitarian. It is not relevant for him to judge societal outcomes on the basis of whether some aggregate measure of welfare is changed, with transaction costs being factored into this measure. Instead, as a contractarian he stresses agreement, so that, roughly speaking, what is good is what is agreed upon. But this presupposes that the contracting parties have agreed to negotiate, to use a common language, to fulfill the terms agreed upon, etc.

the relevant rules, does that not imply that some interpersonal comparisons have been made and an order of priority regarding those judgments has been determined? Who is then to make the comparison?

From a different angle, however, a college-educated person and an elementary-school graduate are likely to make different judgments in choosing the institutional rules. And a society consisting of extremists of various religions obviously incurs different transaction costs in dealing with public policies from those incurred by one that enjoys more religious harmony.¹⁶ Therefore, even from the viewpoint of subjective values, is there not room for improvement?¹⁷

In short, Buchanan's critique sheds new insights on the Coase theorem, but it also raises challenging new questions.

4 Reconciliation of Coase and Buchanan

In this section, I will attempt a reconciliation between Coase's and Buchanan's views of the Coase theorem. Specifically, I will first use the *metric of the market* to represent Coase's objectivist position and the *metric of the heart* to represent Buchanan's subjectivist position. Then, I will construct the link between the two metrics and derive a few implications. Hopefully my interpretations will bring new light to the understanding of Buchanan's and Coase's positions.

4.1 Metric of the Market

The market is a place where transactions take place. The term "market" has been used with a geographic connotation, but as transactions can now be accomplished between parties thousands of miles apart, it has acquired a different meaning. The market presently refers to an exchange process instead. Under normal circumstances, resources change hands through the market by mutual agreement, and all the parties involved gain from the exchange. An important advantage of utilizing resources through the market is the implicit respect placed on individual sovereignty. In the market, no one, conceptually speaking at least, will be forced to make a trade; a trade will occur only when it is based on voluntary agreement. A person can determine according to his own preferences where to trade, what to trade, and when to trade. This means that in the market a person can try to pursue his personal welfare to the best he can. While the respect for individuals is an important as well as fundamental aspect of the market mechanism, it is often neglected nevertheless.

When the market mechanism functions to the fullest extent, the utilization of resources will be highly efficient, as there are no barriers to trade and all the

¹⁶ The present paper was written long before the 9/11 tragedy, but that incident seems to make the argument here even more relevant to reality.

¹⁷ BUCHANAN [1990] does suggest that economists can act as entrepreneurs to suggest better rules to be considered by the relevant individuals, but this seems a passive suggestion. See the alternative policy recommendations discussed below.

trades intended to be made by the participants will be accomplished. Efficiency also implies that there are ratios of exchange among different resources, and an observer can describe the exchange ratios accordingly. But since these ratios are simply the result of numerous, piecemeal exchanges, they have no significance in themselves and therefore should not become objectives to be pursued. Furthermore, these ratios cannot be separated from the participants, for without the latter the former will not come into existence in the first place. Since a common medium of exchange in the market is money, the ratios are often expressed in monetary terms. Thus, when the market mechanism functions well, there are thousands of markets of various sizes and an even greater number of different prices. The prices may be stable for a long period of time, but they may also fluctuate continuously. The prices compete with each other, but they also support each other. The prices are not only ratios of exchange; they are, more importantly, references employed by the market participants in making decisions.¹⁸ Specifically, market participants make decisions based on their understanding of, and their expectations about, the prices. Since market prices are mostly public information, the market participants may well have a common set of perceptions as well as expectations of the prices. For different individuals, this common set can be argued to be *objective*.

That something is objective means that normal, ordinary individuals, who have basic cognitive, communication, and reasoning abilities, will perceive a common set of information. The simplest form of something being objective is this: In stating an incident, different individuals will give the same description. For instance, a statement like "We are all aware that California oranges are now on sale at \$0.40 a pound" will be repeated by different individuals. A slightly more complicated situation is one in which, facing the same situation, different individuals will make the same decision. That is, different individuals will all agree that under the particular circumstance, a specific decision is better, more appropriate, or more accurate. If all the relevant data in making a decision belong to the common set of prices, then an objective assessment about the choice may be possible. For example, if A and B are production materials that are perfect substitutes, then, other things being equal, choosing the less expensive one can be said to be a better choice objectively. Therefore, in this scenario the prices are used as references in determining how resources are to be utilized. In a sense, the price structure can be described as implying a metric of the market, and the markings on the metric are readings of prices as well as degrees of efficiency. The market participants can make their decisions based on the readings of the metric. When the market mechanism is healthy, the markings on the metric are clearly visible and the participants will have

¹⁸ Coase is obviously aware of the factors underlying the price structure, as he argues that "In this article, the analysis has been confined, as is usual in this part of economics, to comparisons of the value of production, as measured by the market. But it is, of course, desirable that the choice among different social arrangements for the solution of economic problems should be carried out in broader terms than this and that the total effect of these arrangements in all spheres of life should be taken into account" (COASE [1960, p. 43]).

rich information at their disposal. In addition, since the metric is a common data set for the market participants, the markings are the same for all the participants.¹⁹ Conversely, when the market mechanism is hindered for any of various reasons, the markings on the metric become blurred, and different individuals may have different perceptions about the readings.

In short, the situation described by the Coase theorem is the case where the market mechanism is functioning to its fullest extent, so the markings of the metric are clearly visible *and* the participants all have the same relevant information and would therefore make the same judgment.²⁰ Consequently, resources will flow to the most valued destination as judged by all the participants, regardless of how property rights are assigned initially.

4.2 *Metric of the Heart*

In the market, there are tens of thousands of prices and the individuals use these prices as references in making their decisions. These prices, however, constitute only a small part of the references individuals rely upon. In addition to the prices, there are usually other, nonmonetary concerns. (For instance, if one buys an appliance from a department store or a discount outlet, then one may get a lower price; but if one buys the appliance from a neighborhood store, one may get better service. As another example, it may not cost too much to hire a private tutor for one's children, but then the children may become dependent on the tutor and ignore their work in school.) Therefore, when a person makes decisions, many of the concerns that cross his mind are known only to him. That is, it may not be possible for others to judge, based on the observed behavior, what actually went through the person's mind. Put differently, market prices are apparent, observable, and, in a certain sense, objective; however, the concerns that one really has in one's mind are implicit, and therefore subjective. Since the utilization of resources is determined ultimately by the human actor, the final allocation of resources and its implicit degree of efficiency is therefore to be determined by the human actor, and different individuals may well have different judgments. In short, different individuals have different preferences, and the subjective nature of these preferences cannot be neglected.

Alternatively, while market transactions are an important way of utilizing resources, they are only one possible way out of many.²¹ The decisions made in the political process, the interactions between and among individuals, the correspon-

¹⁹ Note that one way to connect Buchanan's subjectivist position and Coase's objectivist position is to assume that the market is in long-run equilibrium, as stressed correctly by VAUGHN [1980, p. 708]: "in full market equilibrium with no uncertainty about the future, subjective evaluations of foregone opportunities are represented by objectively measurable outlays on goods and factors." But the real world is not in long-run equilibrium, and neither does it consist of market activities only.

²⁰ For a discussion of Coase's methodological position as implied by his 1937 and 1960 articles, see HSIUNG [2001b] and HSIUNG AND GUNNING [2002].

²¹ NORTH [1990] analyzes how different institutions, including customs, affect resource utilization.

dence among friends, and the dynamics of the bureaucracy in business organizations, etc., all involve the flow and exchange of resources, material as well as nonmaterial. In making decisions on these nonmarket occasions, an individual is not likely to form his judgment by drawing on the market prices. Other factors such as moral convictions (e.g., there should be governmental help for low- and middle-income families, and therefore one supports affordable-housing measures) or beliefs learned in the socialization process (e.g., it is right to pay taxes to support democratic institutions) may be the more important references one draws upon in making decisions.²²

These moral and ethical beliefs, or standards, constitute a value system. Just like the price structure of the market, the value system is also relied upon by the individuals as references in making decisions. While the prices imply relative orderings, these other references are relative orderings too. For instance, when a ship is sinking, children, women, older people, and doctors should be saved first; the waiting list for organ transplant recipients should be ordered according to the time on the waiting list and not according to the probability of a successful operation or the patient's willingness to pay.²³ The value system and the price system are thus identical in nature: they are both orderings. For the individuals, the price system offers monetary readings as criteria to be used to make comparisons, and the value system offers readings such as good or bad, moral or immoral, ethical or unethical, etc., to be used to make comparisons. The prices are visible, but the values are in general not visible. Since the values are subjectively formed by the individuals, the value system is like a metric of the heart for each individual. The markings on the metric are concepts such as good or bad, fair or unfair, etc., and the relative orderings of these concepts determine the positions or the magnitudes of the markings. Each individual has a metric in his heart, and for different individuals, the metrics of the heart are often different.

In summary, individuals rely on their respective value systems for reference in making decisions. The value systems in turn imply subjective orderings of various values, and can thus be termed the metrics of the heart for the individuals.

4.3 *Connections*

While the metric of the market is objective and consists of thousands of market prices, the metric of the heart, by contrast, is subjective, and each individual has his own. Its markings are formed mainly in the socialization process, and the metric is certainly not rigid, as it will be modified in response to changes occurring both inside and outside of the individual.

Since an individual lives in a human society, as emphasized in the beginning of the present article, he will interact with other individuals, and together they face certain common problems. To solve these problems of mutual interest, an individual's subjective metric of the heart must have some common ground with the metrics

²² See the discussions in THUROW [1974] and BUCHANAN [1987b].

²³ With numerous real-world cases, ELSTER [1992], [1995] describes what criteria may be adopted to distribute limited resources.

of the hearts of other individuals. For instance, if most individuals did not believe that a democratic system is better than the alternative forms of government, the democratic system would not have been adopted or supported. Similarly, if most individuals had not agreed that “one man, one vote” is fundamental to a democracy, other arrangements might have been instituted.

Consequently, for a society to survive and to prosper, there are certain conditions that have to be satisfied. One such condition is that there must be a sizable number of individuals who, on their metrics of the heart, have the same relative orderings about the basic institutional structure of the society. That is, a basic common set of the individuals’ metrics of the heart is needed. If this condition does not hold, then it is likely that the society will not be able to cohere.²⁴ Therefore, since the metrics of the heart of the individuals are related to the survival as well as the development of a society, can certain measures be taken so as to strengthen the common set of the metrics? Specifically, since elements of the metric of the heart are formed in the socialization process, can a society’s education system take a more active role in shaping the metrics of the heart for its members? While this may imply that certain members of the society are trying to impose their own preferences on others, if all or a sizable majority of the individuals in a society believe that this is acceptable and desirable, then the more important question would be to find a feasible way to implement it. That is, based on the consensus of the majority of individuals, as reflected in the same relative ordering on their metrics of the heart, a society can in fact try to instill certain values into the future generations. And this insight arguably can be said to fill the void of policy implication of Buchanan’s critique as pointed out above.

It is clear that a common set of the individuals’ metrics of the heart will make it easier for the individuals to arrange and maintain the basic structure of the society.²⁵ Therefore, instilling some widely shared fundamental values in future generations will reduce *transaction costs* in dealing with the common problems the individuals face, if the term transaction costs is given a wider reading. Thus, the characterization in the title of Buchanan’s critique – that transaction costs are irrelevant – is misleading; for transaction costs are not only relevant, they are in fact critical for Buchanan’s thesis. For the individuals to agree on the *rules* and, moreover, to agree on better rules, it must be the case that the individuals share some basic values in their beliefs.²⁶

²⁴ NORTH [1990] argues convincingly that a society’s institutional structure determines its long-term trajectory, and that the basis of the institutional structure is the support from members of the society.

²⁵ The idea of an overlapping consensus in RAWLS [1989] is similar to the common set of the metrics of the heart. But Rawls’s concern was mainly political, while the metric of the heart covers all areas of human interaction.

²⁶ As pointed out in a previous footnote, the 9/11 incident amply shows that for societies to coexist peacefully, some basic mutual understanding and tolerance are indispensable.

The failure of Buchanan to perceive this subtle but important point is unfortunate. On the one hand, it makes his critique of the Coase theorem truncated and incomplete, because the potential transaction costs in the choice of rules have to be part of the analysis at the constitutional level. On the other hand, it fails to establish the link between the critique and his other writings, for fostering a conceptual common ground has always been a major concern for Buchanan. A few passages from his various writings suffice to show his concerns: "Individuals may or may not seek to modify their own preferences. My model suggests, much more restrictively, that persons rationally will 'want others to want better wants,' or, specifically, that others behave more cooperatively toward themselves in social intercourse" (BUCHANAN [1991, p. 186]). "The institutions (economic, geological, legal, political, social, technological), which define the sizes of community within which an individual finds himself, impose *external* bounds on possible behavior. Parallel to these external constraints there are also *internal* limits or bounds on what we may call an individual's moral-ethical community" (BUCHANAN [1978, p. 366]; emphasis original). "Subjective economics could hardly be discussed in my analysis of variables in pure-commodity space. On the other hand, however, there is nothing in the value dimension itself that logically prohibits the derivations of a fully operational science. Whether or not such analysis is possible depends not on dimensionality but instead on the possible uniformity of valuations over persons" (BUCHANAN [1987a, p. 73]).

Consequently, while the Coase theorem implies that transaction costs should be reduced for economic activities, Buchanan's critique points in the same direction, even though the transaction costs for him are somewhat different from those of Coase. The transaction costs involved in the Coase theorem are related to property-right assignment and institutional structure, and Coase's major concern is thus to increase the efficiency of economic activities; whereas those involved in Buchanan's critique are related to individuals' basic beliefs, and, arguably, Buchanan's concern is reducing the transaction costs and increasing the efficiency in general for members of the society. Actually, BUCHANAN [1984], [1987a, pp. 163f.] seems to have this in mind when he states that "The role of the political order, of law, or government, is to facilitate agreement on institutional arrangements, and to police rights assigned under such agreements," and that "consistency requires that the contractarian apply the same criterion [of agreement] for institutional efficiency that he applies to allocative efficiency within institutions" (p. 165). But it is not clear how one can try to facilitate agreement among individuals if one does not deal with the potential transaction costs involved. Therefore, by interpreting Buchanan's critique in this way, the seeming conflict between him and Coase disappears, as both are concerned with reducing potential transaction costs and increasing the efficiency of human activities, economic as well as noneconomic.

Alternatively and more practically, in a modern democratic society, a basic decision to be made by the metric of the heart for each individual is this. According to BUCHANAN AND TULLOCK [1962], human activities are to be grouped into three different categories – those belonging to the political process, those belonging to contractual arrangement, and those belonging to the individuals' private sphere.

After the division is made, the rules of action in each category are to be determined. For instance, in the political sphere, determining the rules would evoke the following questions: Is the executive branch going to be headed by a president or by a prime minister? Will the legislative body be a single body or bicameral? Similarly, in the area of contractual or voluntary arrangements, one has to answer the following questions: What are the rules of competition in the market place? What will be the process of resolving disputes when they arise? Since individuals have different metrics of the heart, their preferences toward the rules will likely be different. But once agreements are reached, the results can be said to be efficient. In other words, in defining the boundaries of the categories as well as the rules within each category, there are no other criteria for efficiency; the only criterion is whether an agreement is reached. If a new agreement is reached after renegotiation, then the new agreement becomes the more efficient one, as judged in the new circumstances.²⁷

When an agreement is reached, an observer can make the inference that the most efficient agreement has been reached. The agreement does not necessarily have a higher reading of efficiency for all the individuals on their metrics of the heart. Judging from two angles, however, the participants of the agreement do have the same relative reading of efficiency on their metrics of the heart. First, unless all of the relevant individuals agree that a certain issue can be determined by general discussion, it will not become a topic to be discussed. Therefore, for all of the relevant individuals, having it discussed and determined by all must be better than other possible arrangements for them, which means that their readings on the metrics of the heart are the same. Secondly, once it is implicitly agreed that an issue is to be discussed by all, there must also be unanimous approval of the decision rule to be employed. The decision rule may be a majority vote, flipping a coin, or any other means. But unless all of the relevant individuals agree to a particular decision rule, there is no way that a decision can be reached. Therefore, once a decision rule is chosen, it must be superior to other decision rules for all of the relevant individuals, as judged by their metrics of the heart. That is, an observer can infer that there is a common ingredient of the individuals' metrics of the heart, even though the latter are all nonobservable.

It is clear that the nature of the prices and the nature of nonmonetary values such as fairness are different in important aspects. For while an individual can easily read the monetary prices and make decisions, it is obviously much more difficult to read the markings concerning values in general. But even though making decisions concerning prices and making decisions concerning fairness, equality, etc., are somewhat different in many respects, they are the same in a fundamental

²⁷ As pointed out insightfully by a second referee, it may not be reasonable to reduce any transaction costs to zero on the level of market choices, i.e., on the level of choices within rules. In reality, the launch of the euro can be seen as a good example of an adjustment of the *choice of (monetary) rules* in the direction of reducing transaction costs. It is estimated that transaction costs will be reduced by 0.5% of the union's GDP (*The Economist*, Oct. 11, 1997, p. 23). This shows that for the EU member countries economic rationality can in fact overcome ideological and historical differences.

one. For regardless of what decisions are to be made, an individual simply *makes comparisons*. Before making a decision, he compares the prices, moral evaluations, or any other materials he considers relevant. Any outcome resulting from this comparison process is efficient for this individual, since the better, the fairer, or the cheaper alternative has been chosen. That is, while market transactions generate prices that are observable, the prices constitute only part of an individual's reference materials. In making decisions in general, he relies on other reference materials that he considers meaningful. As long as a contractual agreement is reached, the outcome is efficient for the individuals involved. The objectivity of using prices alone to measure the degree of efficiency holds only when the relevant individuals all perceive the same prices, all face the same constraints, and all use a similar reasoning process. If all of the relevant data are contained in the price system and the data are understood by all of the relevant individuals, then the metric of the market can be used to measure efficiency. This means that the origins of the metric of the market are the individuals, and only when these individuals draw on a common set of prices in making decisions can it be argued that an objective measurement of efficiency exists.

In summary, Coase and Buchanan can be reconciled on two aspects related to the Coase theorem. First, they both seek to reduce transaction costs for interpersonal interactions, even though there are important differences between the transaction costs that can be associated with their respective positions. Secondly, while Buchanan emphasizes that individuals make subjective judgments and Coase's efficiency criterion implies objective values, the essence underlying the human behavior they analyze is the same – individuals rely on relative orderings of monetary prices and/or various values as references in making their decisions.

5 Conclusion

If human beings were all living separately on isolated islands, then, as indicated in the introduction of the present paper, there would be no human interaction and most of the important economic problems simply would not arise. Unfortunately or fortunately, human beings do live together; this means that the individuals can seek mutual gains through market or nonmarket exchange, but it also means that human interactions are not necessarily mutually beneficial in general. This paper touches on one aspect of human interaction in economic and noneconomic spheres, and the major points of the above analysis can be summarized as follows:

(a) Individuals interact with others in both material and emotional domains, and the various interactions all involve the flow of resources. Whether a particular outcome is efficient or not cannot always be judged by an observable, objective standard.

(b) The metric of the heart is marked by magnitudes of fairness, justice, and other subjective values. Each individual deals with other individuals by drawing references

from his metric of the heart, and the individuals jointly determine the range, the extent, and the rules of the political process as well as those of market and other activities.

(c) The metric of the heart is subjective, but an inference can sometimes be made as to readings on the metrics of the heart of the relevant individuals from the fact that an agreement has been reached.

(d) Market transactions are only part of the interactions undertaken by an individual in dealing with other individuals, but these transactions generate prices that are normally observable.

(e) If the same prices are perceived by different individuals, then the prices become objective to these individuals. The objective price system then implies a metric of the market, and the metric is marked by magnitudes of efficiency.

(f) If all the relevant reference materials are offered by the price system, and if the decision is made by drawing only on these materials, then there is an objective criterion for efficiency. Different individuals will make the same efficient decisions.

(g) The Coase theorem implies that transaction costs should be reduced to increase efficiency for economic activities; Buchanan's critique is interpreted as implying that transaction costs should be reduced for human interactions in general. Transaction costs are not only relevant; they are in fact critical to both the Coase theorem and Buchanan's critique.

(h) In an abstract sense, Coase and Buchanan are reconciled by their similar concern for the efficiency of human activities as well as by their desire to look for proper measures to increase that efficiency.

The Coase theorem is an insightful proposition about economic activities, and Buchanan's critique enriches it by emphasizing the subjective nature of values. By reconciling the views of Coase and Buchanan on the theorem, it is hoped that this paper has illustrated the differences as well as the link between objective and subjective values. But the present paper has been only an initial attempt to explore the implications of the differences and the link, as many relevant and important issues remain unexplored. Further work along this line of inquiry is obviously needed.

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