Journal of Institutional Economics (2017), 13: 4, 785–792
 doi:10.1017/S1744137417000091
First published online 24 March 2017

Comment

Property as sequential exchange: definition and language issues

DOUGLAS W. ALLEN*§

Abstract. Benito Arrunãda's paper on the transaction cost problems involved with land, provides an excellent explanation of land legal institutions. This explanation revolves around the fact that land exists through time, and that various exchanges made with respect to land at one time affect exchanges in other times. Arrunãda refers to this as 'sequential exchange', and he argues that sequential exchange provides the explanation for state involvement in titling and the default nature of *in rem* rights. Unfortunately, Arrunãda frames his argument with an inappropriate notion of transaction costs. This creates a confusing language, and a faulty interpretation of Coasean logic. Reframing the first sections of his paper using the 'property rights' definition of transaction costs brings brevity and clarity to the ultimate point he is trying to make.

1. Introduction

Arrunãda's (2017) paper provides some excellent insights. Foremost is the observation that many human interactions involving real property are 'sequential'; that is, they take place over time. Furthermore, most of these interactions are unknown and likely involve strangers from both the past and the future. In essence, real property exists through time like a thread, and those attached to the thread at one point in time are essentially attached to all others connected at other times. Being so connected, people necessarily exert an influence – an externality – on others. Indeed, the very possibility of being connected in time through property affects the expected value of all property, whether the connections are actually there or not. Arrunãda points out that these externalities mainly take two forms: 'use externalities' and 'exchange externalities'.

Second, Arrunãda notes that generally speaking, the field of law-and-economics has ignored the issue of 'sequential exchange', and has examined simpler 'contractual' problems related to property in the context of a single bilateral exchange framework. According to Arrunãda, this contractual bias has

*Email: allen@sfu.ca
§Thanks to Benito Arrunãda and Yoram Barzel for their comments.

prevented institutional scholars from appreciating property law as a complex institution. In particular, these scholars have over-emphasized *in personam* rights to the exclusion of *in rem* rights, and this has led to a number of failures in understanding (e.g. failures to explain the division of private and public ordering in land titling) and in policy (e.g. an over-emphasis on initial allocations and private contracting, and a downplaying of the importance of legal rights).[1]

All of these points are well taken, important, and couched within the context of land-titling institutional details. However, I fear that Arrunãda's message will be mostly lost or ignored. The problem lies in his analytical setup, his language, and his definitions; which at best require a generous translation into better defined terms to be understood, but at worst do not logically follow. The problem is an old one: the definitions of transaction costs and property rights, and the relationship between these two concepts. An understanding of these ideas guides us to the logic and meaning of Coase (the starting point for Arrunãda), and a proper understanding of the role of sequential exchange.

In this brief note, I want to point out the problems that arise in the first part of Arrunãda's paper, and then recast his key ideas in what I consider to be the more useful language of economic property rights.

2. Transaction costs and property rights

For all of its shortcomings, mathematical economics has taken over much of the economics profession because it has one thing going for it: a convention of language that force the laying out of assumptions, definitions, and procedures. Since the mid-1980s, I have suggested the same rigour should be applied to (what then was called) 'transaction cost economics'.[2] For whatever reason, institutional economics is plagued with a handful (or more) of definitions of transaction costs and property rights (almost always implicit), which create an ambiguity in a given analysis, are often in conflict with Coasean logic, and generate a reputation of hand waving among others outside the discipline.

The critical starting point is understanding the question *and* answer in Coase (1960). Coase argued that (1) all actions have costs and benefits (the reciprocal nature of the problem) *even when the costs and benefits are not borne by the same person*; (2) the ultimate allocation of resources 'is independent of the legal position if the pricing system is assumed to work without cost' (1988: 104, the 'Coase Theorem'); and (3) 'when the costs of market transactions are taken into account ... the problem is one of choosing the appropriate social arrangement for dealing with the harmful effects' (1988: 118). He went on to argue his case

1 One could argue there is a similar contractual bias in the economic treatment of marriage, which has led to a failure to see it as a complex institution, full of *in rem* rights.

2 I first laid this case out in my 1988 dissertation, but see Allen (1991, 2000, or 2015a) for a few calls to standard and appropriate definitions.

https://doi.org/10.1017/S1744137417000091 Published online by Cambridge University Press

mostly with examples, but his purpose was to show that positive 'transaction costs' were *necessary and sufficient* for any understanding of how things like 'legal positions' are allocated.

As is well known, Coase did not define the critical concept of transaction costs on which his argument rested, and this led to decades of ultimately wasted debate. A useful and meaningful definition must answer the following question: what costs are necessary and sufficient to violate the Coase Theorem? Having asked this question many times before, I will only repeat the most recent answer:

> The definition of transaction costs that works is fundamentally related to 'economic property rights'. Namely, transaction costs are *the costs of establishing and maintaining economic property rights*. Following others, economic property rights are defined as the *ability to freely exercise a choice*.
>
> Property rights can be *complete*, meaning all attributes of the thing are owned and not in the public domain; and they can be *perfect*, meaning that the actual choice is fully manifested. Transaction costs are defined with respect to perfection. (Allen, 2015a: 382; Italics in original)

It is important to keep in mind that transaction costs are defined in terms of economic rights (which are a function of legal rights), and that there are two features of these rights: completeness and perfection.[3] In contrast, Arrunãda defines transaction costs as simple 'trading costs', an old practice that I have called the 'neoclassical definition'. These costs are not necessary nor sufficient in Coasean logic (Allen 2000), and therefore, create an unnecessary confusion in his paper for those who read carefully.[4] It is also important to note that positive information costs are necessary for transaction costs to exist, but not sufficient (Allen, 2000).

3. Clear language

On sequential exchange

Sequential exchange plays a major role in Arrunãda's paper, and indeed, he argues that we cannot understand property (land) institutions without understanding the externalities that arise from sequential exchange. Consider his exemplar of such an exchange, the secret lien:

3 'Economic property rights' reflect the ability to freely make choices over things. 'Legal property rights' reflect the ability to freely make these same choices under the law. The distinction, in economics, goes back at least to Alchian (1965), but is articulated in more detail in Allen (1991) and Barzel (1989, 1997). The December 2015 issue of this journal had several articles that focused on the distinction. See Allen (2015b), Barzel (2015), Cole (2015), and Hodgson (2015a, 2015b).

4 One confusion arises over his claim that these cost are 'independent of property rights', which is literally true given his definition, but which is an unfortunate use of words since it is not true under the relevant property rights definition of transaction costs. Another confusion arises over the fact that 'trading costs' are not the type of transaction cost implicit in Coase.

https://doi.org/10.1017/S1744137417000091 Published online by Cambridge University Press

> [S]uppose that landowner O grants a secret lien to L at time $t1$, sells the parcel to B at time $t2$, and then L seeks to seize the parcel to satisfy the lien at time $t3$. (Arrunãda, 2017: 3)

Such a lien creates obvious problems. Buyers, wary of holders of said liens, invest time and effort to identify them and may abandon a property exchange if they consider the trouble more than it is worth. The owner L may also find it hard to make exchanges using the land as collateral given the possibility of a secret lien. Furthermore, as Arrunãda notes, similar problems also arise with sequential 'secret sales' or sequential 'secret granting of rights'. I might add that problems also arises over *forgotten* sequential claims. Indeed, the problems can arise even when there is no sequence!

Unfortunately for Arrunãda's discussion, the 'sequential' aspect of these exchanges by itself is neither here nor there. There is nothing particularly special about sequential claims; the critical matter is one of 'secrecy', or more correctly, positive information costs. Had the lien, sale, or grant been known by all for free, there would be no need to identify, avoid, or pay a premium for a loan. Secrecy, however, exists only because information is costly, and this secrecy leads to the subsequent positive transaction cost behaviour that Arrunãda is concerned about.

If transaction costs – as *necessarily* defined within Coasean logic – were zero, then there would be no problem with liens because there could be no secrecy. That is, if it cost nothing to identify the existence of liens, all liens would be known and reflected in land prices. By assuming that the 'trading costs' are zero and then calling them 'transaction costs', Arrunãda is drawn to infer there is something special about 'sequential exchange' in and of itself, but this is not true. True enough, in the real world, transaction costs are positive, and they are likely very high with sequential exchanges, but let us focus on the real culprit (positive transaction costs). At best, this treatment is unnecessarily cluttered and confusing.[5]

But there is more than just a matter of nomenclature at stake. Recall that Coasean logic, the foundation of institutional economics, merely states that when transaction costs are positive, then 'the problem is one of choosing the appropriate social arrangement for dealing with the harmful effects' (Coase, p. 118, 1988). In this context, given the problems of sequential exchange and secrecy, we should expect a complex type of institutional solution that is the appropriate choice in the given context. However, in treating 'sequential exchange' as a special type of problem, Arrunãda adds clutter to this logic. For example:

> Solving them [externalities] therefore requires more than private contracting ... there is no need for registries in the contractual interpretation

5 To test this, use the property rights definition of transaction costs and replace 'sequential exchange' with 'positive transaction costs' throughout Arrunãda's paper, and see how much easier it is to read and understand.

https://doi.org/10.1017/S1744137417000091 Published online by Cambridge University Press

> of the Coasean framework, which can be characterized as 'single exchange'. In particular, registries only become necessary when we exit the world of isolated transactions and move into the real world of contractual interactions, or 'sequential exchange'. (Arrunãda, 2017: 4)

Coase used only a simple single exchange context to make a point, and he would have had no problem with saying that land registry institutions arise in the real world where exchange is often complex. Again, the problem is not one of moving from 'isolated' to 'sequential', but of moving from zero to positive transaction cost cases. 'Sequential exchange' is an important factor in the context of property institutions, but only because of the positive transaction costs that can arise with it.

In a similar fashion, the original Coasean logic has no problem with the concepts or distinction of *in personam* and *in rem* rights, even though these concepts have rarely been mentioned in the literature. As mentioned, there are two dimensions to property rights: 'perfection', and 'completeness'. An *in rem* right is simply one that is more complete than an *in personam* right. Other things being equal, of course a more complete right is more valuable. Once again, there is nothing fundamentally new here, we already have the tools to frame these matters. And such a framework prevents statements like the following:

> [M]ost of the economic literature on 'property' rights ignores this distinction between in rem and in personam rights, and the greater value of in rem rights.[6] This simplification is only natural in a single exchange context because all rights are in personam. (Arrunãda, 2017: 4)

In a zero transaction cost framework where property rights are perfect, there simply is no economic difference between the two sets of rights because the distinction is only a matter of completeness. With zero transaction costs, all attributes of an asset are owned. If they are all owned by one person, the individual's property rights are complete and (in a given legal context) we might say *in rem*. If the property rights are all owned, but the ownership of the various attributes are spread across many individuals, then any individual's economic property rights are incomplete and (in a given legal context) we might say *in personam*. This is why so many have ignored the distinction. Of course, if one is worried about real world institutions of legal property, ignoring in this way

6 At this point in his paper Arrunãda makes critical reference to my idea that property rights involve 'the exercise of a choice'. He's critical because he thinks this expression keeps 'the analysis in purely contractual, single-exchange, terms' (2017: 4). This does not follow, since the idea/expression applies to *in rem* rights. *In rem* rights are more complete, and therefore, one's 'ability to exercise choices' applies to more dimensions of the property. In this sense, the ability to choose is greater than with *in personam* rights and this illustrates why, other things equal, *in rem* rights are more valuable than *in personam* rights. The 'ability to exercise choices', therefore, obviously differs between 'single exchange' and 'sequential' exchange', other things being equal. The 'exercise of a choice' is not constrained to single bilateral exchanges.

would be inappropriate because transaction costs are positive. Once again, the critical issue is the level of transaction costs.

On Coasean property

Arrunãda is absolutely correct in pointing out that Coase abstracted from most real world problems that arise over owning land. When Coase brought up the problem of trespassing cattle, he didn't worry about the history of farmer's ownership, whether his brother-in-law was a joint-tenant or tenant-in-common, or if there was a long forgotten drainage pipe running across the field owned by the widow next door – these matters, as important as they can be in real life, were irrelevant to his purpose. However, Coase does not abstract from these matters in the rancher/farmer case 'because his world is a world of single exchange' where 'all rights are in personam'. He abstracted because he was discussing a zero transaction cost environment where the number of cattle is independent of *the number of people against whom the right stands*. It is not that all rights are *in personam* for Coase; they could just as easily be said to be all *in rem*, Coase's great argument goes through.

It is also no surprise that the little framework Coase used to elaborate on the Pigouvian problem between the farmer and the rancher must be abandoned if one is interested in explaining the complex bundle of rights that make up property law, and I agree with Arrunãda that the thread of rights over time is a critical component of why property law defaults so often to *in rem*. But it does not follow, or at least it is very confusing to state:

> [W]hen sequential exchange is considered, a conflict emerges between transaction costs and property rights: free private contracting of in rem rights obscures the definition of rights – the allocation of entitlements – for all assets of the same type. (Arrunãda, 2017: 4)

This 'conflict' only arises because transaction costs were inappropriately defined as plain old 'trading costs' – simple frictions. A reader in the Coasean tradition – using the appropriate property rights definition of transaction costs – would see no conflict, but simply a reciprocal problem.

Contracting on one dimension (e.g. entering into an easement with a neighbour) has benefits to the contracting parties, but this ability poses costs on many others. We're back to the basic Coasean question, with the same general solution: 'the problem is one of choosing the appropriate social arrangement for dealing with the harmful effects' (Coase, p. 118, 1988).

A reframing

Let me now translate the first six pages of Arrunãda's paper:

> In the real world, transaction costs are positive and so we know information is not free. In such a world, real property (like land) exists through time with a sequential character, and as a result multiple people can be limited owners of the

https://doi.org/10.1017/S1744137417000091 Published online by Cambridge University Press

> property and not know it. These people will inflict externalities on each other, and attempts will be made to exploit these opportunities and defend against them. Such a transaction cost problem is not easily solved by contracts, since they require knowledge of who the contracting parties are – and this is often infeasible for individuals to accomplish alone – and there is a tradeoff between allowing one bilateral right and its infringement on other potential and real owners. More complicated institutions are necessary, and state involvement and in rem rights are important features of these institutions.

Such a summary is far more accessible to general economists and others, and is sufficient for the real task of Arrunãda's paper, which is to discuss various aspects of property (land) institutions and to explain why various land policies often fail.

4. Conclusion

Benito Arrunãda understands transaction costs, and he certainly understands the economics of property law. I suspect much of his frustration, which leaps off the page, stems from the *(mis)practice* of Coasean logic, rather than the framework itself. It is an unfortunate fact of our discipline's history, that economists like Alchian used the term 'property right' with complete independence (and perhaps knowledge) of how lawyers used the term. Likewise, the term 'contract' in economics is still used by most with no reference to contract law. No one pushed the economic use of 'contract' more than Steven Cheung, who used the metaphor to apply to everything, including marriage. Ironically, he did so in an effort to move away from the simple neoclassical notion of the 'contract curve'. I suppose, and here I agree with Arrunãda, he was too successful in this regard.

There is so much wrong in the practice of institutional economics. Arrunãda is right that it is naive to think that a mere initial allocation of rights is all that is needed to solve land allocation problems. Many recognize this, but in the province of British Columbia where First Nations land claims are still unsettled, it is common to see this policy suggested. He is also right that there is often a bias towards private ordering as a solution to development issues, especially with respect to land. But these are all matters of practice, not principle.[7]

It is imperative to recognize that the core Coasean logic is sound, and when combined with the proper definition of transaction costs and property rights, it is a powerful and simple way to understand and organize our thoughts. It is my opinion, that had Arrunãda stuck to this worked out methodology, language, and definitions, the first seven pages of his paper could have been two, and the

7 Arrunãda does not approve of the Barzel/Allen approach to legal and economic rights, but on this point it must be noted that we have both contributed to understanding when and why private orderings are not used. So it cannot be claimed that the bad practice is a function of our approach.

https://doi.org/10.1017/S1744137417000091 Published online by Cambridge University Press

added clarity would have reduced the entry costs of getting to the meat of his worthy argument.

References

Alchian, A. (1965), 'Some economics of property rights', *Il Politico*, **30**(4): 816–29.
Allen, D. W. (1991), 'What are transaction costs?' *Research in Law and Economics*, **14**: 1–18.
Allen, D. W. (2000), 'Transaction costs', in B. Bouckaert and G. de Geest (eds), *Encyclopedia of Law and Economics*, Cheltenham: Edward Elgar Press, pp. 893–926.
Allen, D. W. (2015a), 'The Coase theorem: coherent, logical, and not disproved', *Journal of Institutional Economics*, **11**(2): 379–90.
Allen, D. W. (2015b), 'On Hodgson on property rights', *Journal of Institutional Economics*, **11**(4): 711–17.
Arrunãda, B. (2017), 'Property as sequential exchange: the forgotten limits of private contract', *Journal of Institutional Economics*, published online. DOI: 10.1017/S1744137416000473.
Barzel, Yoram (1989, 1997 editions), *Economic Analysis of Property Rights* (Cambridge: Cambridge University Press.
Barzel, Y. (2015), 'What are "property rights", and why do they matter? A comment on izeHodgson's article', *Journal of Institutional Economics*, **11**(4): 719–23.
Coase, R. (1960), 'The problem of social cost', *Journal of Law and Economics*, **3**: 1–44.
Coase, R. (1988), *The Firm, the Market, and the Law* (Chicago: University of Chicago Press).
Cole, D. (2015), '"Economic property rights" as "nonsense upon stilts": a comment on Hodgson', *Journal of Institutional Economics*, **11**(4): 725–30.
Hodgson, G. (2015a), 'Much of the "economics of property rights" devalues property and legal rights', *Journal of Institutional Economics*, **11**(4): 683–709.
Hodgson, G. (2015b), 'What Humpty Dumpty might have said about property rights – and the need to put them back together again: a response to critics', *Journal of Institutional Economics*, **11**(4): 731–47.