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THE FALL AND RISE OF FUNCTIONAL PROPERTY

Francesco Parisi^{1*}

Abstract: In spite of its stability as a fundamental institution of human society, the concept of property and the privileges, obligations, and restrictions that govern ownership have undergone substantial change throughout history. In this essay, I consider the main stages in the evolution of property and discuss some of the important structural variations of the legal and social conceptions of property. The comparative and historical study of the institution of property reveals a close relationship between the structure of an economic system and the structure and content of property rights.

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All societies recognize private property, to a greater or lesser extent. The content of property and its entitlements, however, varies substantially across societies, both historical and contemporary. The comparative and historical study of the concept of property reveals a close relationship between the structure of an economic system and the structure and content of property rights. In this essay, I shall consider the origins and the main stages in the evolution of property and elaborate an economic explanation of the evolved conceptions of property.

Property rights emerge and grow in societies in relation to the cost/benefit calculus regarding the establishment and protection of such rights. Economic change creates new cost-benefit relationships, giving rise to modifications in property regimes (Rose, 1998; Posner, 1998).² This gives rise to a ground-up conception of property, in which the legal notion of property reflects the localized and evolving function performed by property in society. The natural propensity of humans to possess

¹ Professor of Law & Director Law and Economics Program, George Mason University. An earlier version of this study was published as an entry in the Elgar Companion to Property Rights edited by Enrico Colombatto (2005). I would like to renew my thanks to Lee Istrail and Peter Irvine for their valuable research and editorial assistance.

² Posner (1992, p. 36) points out that, at common law, domestic animals are owned like any other personal property, whereas wild animals are not owned until caught or killed. This is because the cost of enforcing private property rights over wild animals outweighs the value of the animals.

productive and scarce resources and the social acceptance of this human attitude gives origin to the institution of property and its regulation. This functional and dynamic evolution of property is the object of this study.

I. A SKETCHED HISTORY OF PROPERTY

The institution of property is nearly as old as recorded history. In spite of its stability as a fundamental institution of human society, the concept of property and the privileges, obligations, and restrictions that govern ownership have undergone substantial change throughout history.

The history of property is illuminated by economic theory. The concept of scarcity – which some notable authorities believe is at least a necessary condition for the establishment of enforceable property rights — is valuable in explaining the limited domain of property in early societies and the changing contours of property protection as a result of changes in the economic structure of society.³ As pointed out by Demsetz (1967), property rights develop to internalize externalities in the use of scarce resources. However, there are costs associated with the establishment of property. While scarcity may be necessary for giving objects value and prompting the desire to have property rights, the establishment of such rights also requires that their protection be economically efficient from a societal standpoint, in the sense that the marginal benefit of protection (internalization) exceeds the marginal cost of protection. Property rights emerge only when the gains of internalization become larger than the cost of internalization. The study of the historical evolution of property confirms these economic propositions and reveals that changes in the economy often trigger changes in the social and

³ Smith ([1776] 1986); Demsetz (1967). Rose (1985) similarly suggests that in addition to scarcity, 'we need the capacity to shut out others from the resources that are the objects of our desire, at least when those objects become scarce' and that 'by allocating exclusive control of resources to individuals, a property regime winds up by satisfying even more desires, because it mediates conflicts between individuals and encourages everyone to work and trade instead of fighting, thus making possible an even greater satisfaction of desires' (Ellickson, Rose & Ackerman 1995, p. 22).

legal conception of property.⁴

A large number of anthropologists and legal historians have come to agree on the identification of some general patterns in the evolution of property, as I shall now describe.

1. Hunters and Shepherds: The Rise of Functional Property

The age of hunters is perhaps one of the first stages in which humans appeared to assert property claims over physical resources. In a hunter's society, property consists mostly of what hunters can kill for their own consumption or trade. At this stage, there is no need to define property rights over other resources, such as land or stock of wild animals, and consequently little need for institutional protection of property rights.

During this era, the social structure is characterized by the presence of tribes, or clans. The modes of production in this phase are hunting and fishing, and joint production and equitable sharing governed the distribution of the bounty.⁵ The clan, which is a group of several families, acts, in effect, as a family-based firm.⁶ This segment of the tribal property stage appears to correspond closely to Adam Smith's ([1776] 1986) description of the first stage of development in human society (the age of hunters).⁷ Smith observes that, at this stage, abundance of unclaimed resources made establishment of property rights unnecessary, as negative externalities from overuse were unlikely. Any property claim

⁴ Economists have rationalized the conditions for the emergence of property rights. Demsetz (1988, p. 107) pointed out that 'Increased internalization, in the main, results from changes in economic values, changes which stem from the development of new technology and the opening of new markets, changes to which old property rights are poorly attuned'.

⁵ LaFargue (1975, pp. 22-24) uses data from Lewis Henry Morgan's (d. 1881) famous anthropological studies to suggest that a similar phase of evolution characterized the social setting of Native American tribes. These clans shared in the product of each producer, distributed meals equitably, ate moderately, and that the tribe's life could be characterized as 'primitive communism.'

⁶ LaFargue (1975) defines a family as a 'consanguine collective', or a group of blood relations.

beyond what the hunters' clan could use for their own consumption would in fact impose prohibitive monitoring and enforcement costs.⁸

Quite interestingly, Bouckaert (1999) points out that, even when property rights to a stock cannot be established, property rights to its flow still might be created.⁹ Such a regime of property claims over flow, rather than stock, of resources, seems to characterize this first stage in the evolution of property.

Economic historians generally identify the second stage in the evolution of human economy as the age of pasture and shepherds. During this period, people begin asserting property claims over animal herds and grazing lands. Property claims were still asserted by the tribe, rather than by individuals within the group. In most early societies, population increase and gradual competition for the use of land for grazing required that land to be divided among tribes: 'The earliest distribution of the land was into pasture and territories of chase common to the tribe, for the idea of individual ownership of the land is of ulterior and tardier growth' (LaFargue, 1975, p. 36). Such claims are initially asserted by means of occupation, use or accession. In this phase, tribal property is non-transferable.

⁷ Adam Smith ([1776] 1986, pp. 69-70) identifies four stages in the development of civil society, two of which are closely tied to the origins of property. The first stage, according to Adam Smith is the age of hunters.

⁸ Maine ([1861] 2000) examined whether the property regimes that preceded the modern individual property system evidenced a predominantly communal or individual character. The results of his investigation led him to criticize other theorists' emphasis on the role of individual property. Even when human societies came to accept the idea that the majority of objects can be subjected to private ownership, the holders of such property rights were often family and groups, rather than single individuals. Maine likens the early regimes of property to systems of joint ownership, not separate ownership. Looking at the origins of property in Chapter 8 of his book, Maine ([1861] 2000) thinks a major flaw in the occupancy theories of the origin of property is that they look at individuals rather than families and groups. He says it is likely that property originated as a communal claim. He looks at the Village Communities in India to support this theory. In these communities, as soon as a son is born, he acquires a vested interest in his father's property (the family estate). The property remains undivided for several generations.

⁹ Bouckaert (1999) discusses various property rules that maximize societal utility, drawing a distinction between a property right to a stock and a right to its flow. For example, assigning property rights to own a herd of wild animals would be prohibitively expensive but rights to captured and killed game can be created efficiently.

As people appropriated herds and flocks, the supply of available animals became scarce, such that the remaining individuals were unable to gain their subsistence from hunting. The property owners consequently grew fearful that the poor would attempt to appropriate their property. This is the stage during which greatly unequal distribution of property first arises. The extremely unequal distribution of claimed resources and subsequent scarcity of unclaimed resources are each necessary, and the combination of them sufficient, for establishment of property rights. Smith ([1776] 1986) argues that individuals thus first gained the right to exclude others from their property.

2. Agriculture and the Rise of Spatial Property

In subsequent times, agriculture and management of farm animals gradually became the predominant modes of production. Pipes (1991) focuses on resource depletion as the primary genesis of the human notion of property, noting above all else that communal ownership is inefficient. He writes:

'[I]n all primitive societies and most non-Western societies in general, land was not treated as a commodity and hence was not truly property, which, by definition, entails the right of disposal... The transformation of land into tribal, family, or individual ownership seems to occur, first and foremost, in consequence of population pressures which call for a more rational method of exploitation, and it does so because the unregulated exploitation of natural resources leads to their depletion.'¹⁰

¹⁰ Pipes (1991, p. 89).

The transition from hunting and gathering to agriculture around 10,000 BCE made land use more efficient and increased the value and resulting social appreciation of property.¹¹ This change in the economy is accompanied by a gradual gain in the importance of the family. Family units gradually acquired interests that were different from those of the clan at large. In this context, the tribal land of the pastoral communities was gradually partitioned among the families that constituted the clan or tribe and what was the communal territory of the tribe was gradually parceled out to become the collective property of individual families.¹² Still, the property rights of the family were subject to regulation by the tribe.

The assignment of land to the family units did not take place in what modern scholars would consider full property. Instead, limited property rights were assigned to family units in order to allow them to carry out more effectively the specific agricultural activity that they intended to perform. The land assigned to family units remained subject to other property claims held by the tribe at large. These included rights for hunting and also compatible grazing uses of the land. The territorial scope of the partial property rights depended on the nature of the rights involved. Thus, for example, the pasture of lands was originally the joint property of all the members of the clan. This was so because given the structure of the economy no single individual or family could have optimally exploited such right to pasture. As LaFargue (1975) points out, the unit of the economy gradually changes from the tribe or clan to the smaller family unit. Gradually, the parcels of land were cultivated by each family under the direction of its chief and the supervision of the village council. The resulting crops were the property

¹¹ 'Hunting and gathering, though involving relative little effort, is exceedingly wasteful of land.' Pipes (1991, pp. 92-93).

¹² In addition to parents and their children, the family unit also included the father's 'concubines...his children, his younger brothers, with their wives and children, and his unmarried sisters.' LaFargue (1975, p.50) 'The arable lands, hitherto cultivated in common by the entire clan, are divided into parcels of different categories, according to the quality of the soil...the number of lots corresponds to that of the families.' *Id.* at 52.

of the family, and would not become the property of the tribe or clan collectively, as it was the case in earlier periods.

In these societies, relatively simple rules governed land ownership. The character of property rights allocated to the family unit was related to the prospective functional use of the land. Other tribe members outside the family could continue to use the land for non-agricultural purposes. For example, those who used the land to hunt continued to hold hunting privileges, and those who raised livestock could hold grazing rights in the same geographic area. Such functional conceptions of property were the natural consequence of the derivation of property from actual use and possession of the land. Over time, the way in which the land was used determined the kinds of possession possible.¹³ This system often resulted in multiple property claims coexisting on the same land. Customary rules then regulated the possession, use, and transfer of such functional rights. Such functional divisions often made good sense because different owners could undertake specialized activities over the same territory with little encroachment on one another.

Given the low population density and the limited rate of exploitation of natural resources, functional partitions of property were often efficient. They provided an opportunity to allocate the same land towards multiple privately held use rights, allowing an optimal level of exploitation, as all parts of the property could be used.¹⁴ Detailed customs, based on past usage and historic rights, determined what was considered acceptable conduct with respect to the interaction (natural externalities) between the various activities. Early societies thus embraced a 'functional' conception of property, in which property rights were related to specific uses of the land, rather than a spatial conception of property in which the confines of property were determined by physical boundaries.

¹³ No single act of possession can encompass all potential forms of land use, meaning that the system of deriving ownership from possession generates limited (or 'functional') property rights. Rose (1985) and Parisi (2002a).

¹⁴ For an application of this framework to modern settings, see Banner (1999) and Henry Smith (2000).

Property was not divided along spatial lines, as in the modern world, but through horizontal functional partitions, in which different individuals or families would own specific rights over the land related to specific uses (e.g., farming, fishing, hunting, etc.).

As time progressed, however, agricultural societies developed a more complex conception of property in which functional partitions of rights survived as exceptions to a regime of unified ownership.¹⁵ This paradigmatic shift is understandable, given that in an agricultural economy the coexistence of multiple rights over the same land created conflicts and increased opportunities for wasteful externalities. Furthermore, functional partitioning of land, while efficient in a stable economy, became unsustainable in conditions of rapid economic change. Moving from pastoral to agricultural economies, many societies thus changed their property systems, abandoning functional property in favor of spatial property (i.e., making their property systems more similar to those we are accustomed to observing in the modern Western world).

This transition has an economic explanation. With a rapidly changing economy, optimal uses of land are also subject to rapid flux. Multiple functional claims impeded the implementation of new, more efficient uses of the land. It was also more difficult for agriculture to coexist with other functional uses. Spatial property, with its defined boundaries, was better suited to accommodate the rise of agriculture and its need of hegemony over the use of land.

In spatial property regimes, a single owner generally holds all rights pertaining to a defined tract of land. Such unified ownership better served the needs of a changing economy that wished to harness the economic power of agriculture. The division of property along functional lines, while allowing the optimization of property with respect to all of its potential uses, did not provide sufficient

¹⁵ Absolute property rights can be observed only as an exceptional category in most non-Western societies while they represent a default property regime in modern Western legal systems. Historically, the absolute Western conception of property is not universal.

flexibility to accommodate structural transformations over time. The Romans recognized this, and made absolute ownership rights the cornerstone of Roman property law.¹⁶

3. Feudalism and Medieval Land Law

The historical evolution of property led to the emergence (and gradual dominance) of spatial conceptions of property, with absolute property regimes as the default legal rule in all established agricultural societies. During the feudal era, a new array of functional and legal limitations on the use and disposition of land encroached on the Roman conception of absolute property. Although the foundations of the medieval law of property were unquestionably Roman, the feudal system gradually transformed the accepted social conception of property.

In the feudal world, rights and duties were based on land tenure and personal relationships, and this conception of property was instrumental in maintaining feudal social and economic structure. The early types of land licenses resembled grants of full ownership, but in later times the kings and the lesser lords kept the ownership of the land to themselves and granted only partial rights of use and exploitation.¹⁷ Land was held in fief by vassals as a result of a grant by their lords in exchange for a variety of services and vows of personal loyalty.¹⁸ These grants of fragmented ownership gradually

¹⁶ Obviously, if a single owner can claim tract of land, a different fragmentation problem may take place: excessive spatial fragmentation, leading to inefficiencies of scale. Western agricultural societies dealt with this problem in a variety of ways. In Roman law, the head of the household (*paterfamilias*) had concentrated authority over the property. An elaborate system (*peculium*) mitigated this concentrated legal capacity as with other members of the family group, such as slaves and sons, authorized to make binding legal transactions relating to property. In later times, when legal capacity was extended to every individual of majority age within the group, the fragmentation of property was prevented though other rules and social customs, such as succession rules (e.g., rules of primogeniture), and institutional arrangements (e.g., feudal hierarchies) resulting in the concentration of land in the hands of a few individuals.

¹⁷ Other privileges of the lord included the so-called feudal incidents, which, among other things, gave the lord right to possess the land.

¹⁸ Over time, the services, which were originally related to supporting and defending the lord in time of war through military service were gradually converted into pecuniary obligations. It is impossible to understand the developments of medieval society without realizing that the crown and the nobility (and within each major feudal manor the lord and his vassals) were power centers that were always potentially in conflict. The famous feudal pyramid (king, nobility, lords,

became hereditary holdings.¹⁹ Customary norms prevented the unilateral abrogation of these grants, except as a result of legal forfeiture and seizure.²⁰ This resulted in a multi-layered, and potentially irreversible, fragmentation of property.

In this feudal system of land tenure, each individual was defined by his hierarchical status and relationship to land. With the sole exception of the king, every individual was subservient to another. According to the well-known feudal pyramid, only the lesser tenants (“tenants in demesne”) had possessory use of the land, and all the others served as intermediaries in the collection of fees and granting of services and protection. The king stood as the ultimate residual claimant. Through this process, feudal property became quite distinct from the Roman paradigm of property, as feudal grants were always limited by the act of license and title; possessory interests never resided in the same hands. Property ownership was neither unlimited nor absolute; interests were not enforceable erga omnes, but rather consisted of a bundle of rights and duties, partially applicable to the whole community and partially determined by the specific contractual relationship between the grantor and the grantee. A complex system of political and social control reinforced this transition from the Roman system to the feudal regime of dispersed ownership (and property fragmentation).

Feudalism was inextricably linked to agricultural life. In an agricultural economy, functional forms of fragmentation are generally not problematic, as long as the physical unity of land is preserved. In this respect, feudal legal systems were designed to limit the risk of excessive

vassals) depicts a dynamic society that was often on the verge of disintegration. On the personal level, the loyalty agreement between a lord and his vassal always tended to mask that same kind of unstable relationship and, likewise, the property ties attempted to create a bonding mechanism that would foster stability.

¹⁹ If a tenant died without heirs, the land returned to the lord: a form of residual claim of the sovereign that survives, under different name, in the modern law of successions.

²⁰ Forfeiture and seizure were remedies that allowed the lord to regain possession of the land if a tenant had breached his oath of loyalty or failed to perform the applicable feudal services. Similar remedies applied in the case of high treason in favor of the king. For further discussion, see Dukeminier and Krier (2002).

fragmentation.²¹ Rules of primogeniture²² and prohibition of subinfeuds²³ are examples of the attempts of feudal law to constrain entropy in property.

The hierarchy of services from the tenants in demesne all the way up the chain of ownership to the king also served to structure the agricultural economy in order to support the military, which was of chief importance to a regime constantly on the verge of war. As Dukeminier and Krier (2002) point out, the king originally demanded the service of knights from the lords under him to constitute the military. Those lords, beset with this requirement, would ensure that the knights would be provided by requiring the appropriate services (such as horses, food, etc.) from the vassals beneath them, who in turn would demand from the tenants in demesne the raw materials needed to fulfill the vassal's obligations. In this way, the king, by establishing an ultimate societal goal—a military—and charging others with the task of providing that product, could organize the use of land to meet that goal in a way that Roman property rights would not allow.

The peculiar coexistence of physical unity and legal disunity in feudal property worked in an agricultural economy, but proved problematic in any other kind of economic context. Indeed, feudal

²¹ Even the feudal law of property – often presented as the paradigm of entropic property – conceived remedies to combat excessive property fragmentation. Indeed, while some functional forms of fragmentation of property were instrumental to the stability of the feudal society, others could be easily prevented.

²² In the Western legal tradition, laws forbidding the partitioning of land and establishing the succession to land in favor of the youngest or eldest son have often been utilized to preserve the unity of land. These rules often had customary origins and enjoyed a large degree of voluntary compliance, given the interest of most landowners in protecting the power and prestige of the family, which was traditionally linked to the size of land holdings. In this context, priority in succession was traditionally given to the eldest son (primogeniture) or to the youngest son (ultimogeniture). The principal effect of these rules has been the maintenance of unity in the estate of the deceased.

²³ Rules emerged to prevent the further fragmentation of possessory interests even in feudal times. The tenants in demesne could not subcontract their rights and obligations through the creation of a lower rank of feudal agents. The practice of subinfeudation has provided much of the intellectual justification for the modern constraints on functional property fragmentation. Rudden (1987) refers to this idea as the 'pyramiding' rationale: if each succeeding owner of a property interest has the power to intertwine the land with the performance of a fancy, then the land will be encrusted with a pyramid of obligations not unlike those that were associated with the practice of subinfeudation. Rudden acknowledges the weight of this argument, but makes three objections. First, he thinks that the historical objection to subinfeudation did not primarily concern the layers of obligation. Second, he thinks that a legal mechanism could check the excesses of a wider system of property interests. Third, market mechanisms rather than legal mechanisms may better solve such pyramid problems.

arrangements, which generally flourished in closed agricultural economies, did not take root in urban environments, which were not as integral to the military effort.²⁴ The cities of the Roman empire, in as far as they survived at all, did not have a parallel feudal structure,²⁵ with the exception of some urban areas in Italy and southern France.²⁶

4. The Modern Conception of Absolute Property

With the approach of the modern era came another paradigmatic shift in the conception of property. Just like the transition from pastoral to agricultural economies rendered the so-called functional conceptions of property impracticable, the gradual growth of the economy made the feudal dispersion of control over property highly problematic.

As generally recognized in the literature, the abolition of feudalism was a necessary precondition for the shift to a modern market in land, in which individuals can transfer full ownership and development rights to third parties through contracts or testamentary dispositions. The transition

²⁴ According to Monateri (1996), it is not coincidental that the rebirth of Roman legal studies began at a time of revival of urban life in northern Italy. Southern France was the center of a code-oriented legal system, as the Roman law remained in force. In contrast, a more complete feudal system in northern France led to the development of customary law under the Carolingian Franks. The cities were not centers of feudal, but rather ecclesiastical, power, so that canon law took precedence, although the merchant law was an important component of the ius commune at least in localities with active commercial markets. Parisi and O'Hara (1998) and Parisi (1998) observe that although jurisdictional conflicts were possible, feudal law harmoniously coexisted with the merchant law, given the different focus on property and contract issues (i.e., feudal law generally covered property and status issues, while the latter was mostly dealt with contract and commercial issues).

²⁵ The feudal system did not form the base of jurisdiction in cities, where canon and Roman laws took precedence. Feudal law was not congenial to the dynamic needs of the emerging mercantile class. As a result of the commercial revolution brought about by the medieval mercantile class, the large cities of the former Roman empire became attractive localities for the development of active commercial markets, and most second-generation medieval merchants relocated their center of activity in large cities. At this point, the law merchant became an increasingly important component of the ius commune. For further analysis, see Galgano (1976).

²⁶ Feudalism spread from France to northern Italy, Germany and Spain and, later, into some of the eastern Latin territories of Europe. Most of the other great civilizations of the world have gone through periods resembling the feudal arrangements.

back from the relativistic and contractual basis of property to the Roman absolute conception of ownership was not gradual and smooth, however.²⁷ The historical events surrounding the end of the feudal era demonstrate the power of the irreversible dynamics of entropy in property, a theme of this essay.

Both a political and ideological revolution was required to reshape the dominant conception and content of property. The French revolution marked a critical turning point. In a vain attempt to stave off serious political and social upheaval, the French nobles and clergymen renounced some of their feudal privileges at the first session of the Estates General in over 200 years on August 4th, 1789. The theoretical significance of this action was great, as it freed the land from a multitude of personal servitudes (e.g., hunting rights and labor services). Other feudal burdens (e.g., seigneurial fees) could be extinguished by paying a lump sum amount to the lords (generally corresponding to 20 to 25 times the value of the annuity). In practice, the peasantry was unable to pay the large amounts required to obtain release from the feudal servitudes. The French Revolution brought with it the collapse of the feudal regime, with the outright abolition of all burdens and seigneurial fees without compensation.

During the 18th century, it had become fashionable to point to the feudal tradition as the root of the inefficient property fragmentation and to rebel against the feudal heritage by proclaiming a new paradigm of absolute and unified property. Historically, feudal land systems imposed positive obligations on landholders that were not part of the Romanistic bundle of rights and duties of property holders, mixing absolute and relative rights in a hybrid property relationship. Hegel's ([1821] 1942) philosophical version of this history has influenced the legal conceptions of property around the world. Hegel purports that the standardization of property interests is a movement that is related to the

²⁷ The feudal property arrangements characterized much of the customary law of property, but medieval academic jurists continued to utilize the Roman categories of property in their scholarly writings. This facilitated the return to the Roman categories that were eventually reinstated as part of the opposition to feudalism that helped lead to the French Revolution.

difficult struggle to free property from the pervasive feudal encumbrances, suggesting that individual freedom closely depends on the freedom of property.²⁸

In this setting, the Roman approach became the model for bourgeois property, conceived as an absolute private right to the enjoyment of one's land. This renewed conception is at the origin of much theoretical work in legal theory and philosophy. One can think of John Austin's ([1832] 1885) premise that the right of property consists of two main elements: the right to use the property and the power to exclude others.²⁹ Most importantly, 18th and 19th century theorists specified the structural attributes of a property right. Among others, we find the Kantian notion that universal norms must be negative in content, that is, they 'must command individuals not to do something' and that "the correlative of a real right cannot require action...."³⁰

This conception of absolute property contrasted dramatically with the concept of feudal property as a bundle of rights and duties that mixed relative and absolute relations in both private and public spheres. Although, in many respects, such a unified conception of property was already present in the pre-feudal world, the intellectual reaction against the old regime led to a more nuanced articulation of this ideal.³¹ This theoretical evolution culminated in the revolutionary events of the 1790s that marked the beginning of a new era in the property regimes of France and the rest of Europe. This new legal approach, in order to meld successfully the concepts of functional unity with the revived absolute conception of property, had to have substantive rules to foster functional, physical,

²⁸ Rudden (1987, p. 250) keenly points out 'the word "servitude" covers both slavery and easements.'

²⁹ John Austin ([1832] 1885, p. 808).

³⁰ Rudden (1987, p. 249) thinks that these logically relate to Austin's premise, citing Immanuel Kant ([1797] 1887, p. 14) in support of these propositions.

³¹ Mattei (2000, p. 14) observes that the modern unitary theory of property rights is indeed the intellectual product of the French Revolution. Along similar lines, the extensive work of Rodota' (1990) demonstrates the limits of the analogies between the Roman notions of absolute property and the modern restatement of such notion contained in Article 544 of the French Code of 1804. For further historical analysis of this important transition in the conception of property, see Monateri (1996).

and legal unity in property. These principles of unitary property are embodied in several important rules that characterize modern property law, which I shall consider next.

II. UNITY IN PROPERTY

As a reaction to the feudal tradition, the Rationalist jurisprudence of the 18th century and the modern codifications of the 19th century revived the various important Roman rules of property, recasting them as general principles of civil law. The principles of unity in property can be tentatively grouped under the headings of (i) functional, (ii) physical, and (iii) legal unity. These related principles contribute in different ways to control the problems of entropy in property.

1. Functional Unity

Under classical Roman law, the property owner (proprietaryus) was not allowed to transfer anything less than the entire bundle of rights, privileges, and powers that he had in the property. Conveyances of rights in a lesser measure than full ownership were only permitted on an exceptional basis and in a limited number of cases.³² Thus, for example, the creation of legally binding restrictions on property was limited to situations in which the dominant estate could demonstrate a perpetual need for the arrangement. In the Roman Digest we read that servitudes necessitate a causa perpetua.³³ In other passages, the Roman sources explicitly indicate that the servitudes created for the transitional

³² Thus, for example, use and exploitation rights divorced from ownership (usufructus) could be given only to a living person for the duration of his lifetime; the creation of legally binding restrictions on property (servitudes) was sharply limited.

³³ Paulus Book 25 ad Sabinum in D. 8.2.28: 'omnes autem servitudes praediorum perpetuas causas habere debent' (all servitudes must have a perpetual cause).

benefit of the owner of a neighboring lot (as opposed to the perpetual benefit of the land itself) were not valid.³⁴

As I have discussed above, the notion of absolute ownership underwent a substantial change in feudal law, but eventually regained popularity at the time of the modern European codifications. The modern codes limit the permissible level of functional property fragmentation and further provide property-type protection only for specific, socially desirable, property rights.³⁵ This favoring of certain property arrangements is known as the numerus clausus principle, and is an important expression of the fundamental principle of unity that underlies modern property law. The purpose of this principle is to forestall private individuals from creating property rights that differ from those that are expressly recognized by the legal system.³⁶

The early formulations of the numerus clausus lacked a well-articulated rationale, especially striking because it contrasts sharply with the doctrine of freedom of contract, namely that two parties to a private contract may agree on virtually any arrangement without government limitations.³⁷ The dichotomy between these contract and property paradigms results in a general tension between the principle of freedom to contract and the societal need for standardization in property law. The modern European codifications all reflect this tension. They promote freedom of contract by recognizing and

³⁴ Paulus Book 15 ad Plautium in D. 8.1.8: 'ut pomum decerpere liceat et ut spatiari et ut cenare in alieno possimus, servitus imponi non potest.' (Servitudes cannot be created to grant rights for harvesting fruit or to have meals or merely to walk on another's property) Such atypical arrangements – it was understood as an implicit corollary – could however, be created as a matter of personal obligations.

³⁵ European scholars also refer to this principle by invoking the concept of nominate property rights. Merrill and Smith (2000, p. 69) have recognized that, although the numerus clausus principle is mostly a Roman law doctrine followed and enforced in most civil law countries, the principle also exists as part of the unarticulated tradition of the common law. The authors illustrate the many ways in which common law judges are accustomed to thinking in terms comparable to the civilian doctrine.

³⁶ For a modern challenge to the numerus clausus principle, see Rudden (1987) who critically analyzes the legal, philosophical, and economic justifications for limiting the types of legally cognized property interests to a handful of standardized forms.

³⁷ Merrill and Smith (2000, pp. 68-69) note the peculiar dichotomy between property and contracts, observing that while contract rights are freely customizable, property rights are restricted to a closed list of standardized forms.

fully enforcing both nominate and innominate forms of contract. Yet at the same time they limit private autonomy in property transactions and only enforce transactions pertaining to standardized (or nominate) forms of property.³⁸

Although in many ways the intellectual product of the French revolution, the influence of the numerus clausus principle has lasted well beyond the post-revolutionary codes, and can be found in most of the modern European codes. The Napoleonic Code of 1804,³⁹ the German BGB of 1900,⁴⁰ and several other codifications⁴¹ contain provisions that restrict the creation (or at least withhold the enforcement) of atypical property rights. As Rudden (1987, p. 243) aptly put it, 'in very general terms, all systems limit, or at least greatly restrict, the creation of real rights: "fancies" are for contract, not property.'

These limits on the creation of atypical property rights eventually emerged as a general principle of modern property law. Even jurisdictions that have not formally codified the doctrine adhere to its strictures.

The requirement that the transfer of immovable property be recorded in a public registry enforces the numerus clausus principle because only nominate property rights can be duly registered,

³⁸ This implies that property rights are only enforced with real remedies if they conform to one of the 'named' standardized categories. Conversely, the presumption is the opposite in the field of contracts: the legal system enforces all types of contracts unless they violate a mandatory rule of law concerning their object and scope.

³⁹ Several articles of the French Civil Code embrace the concept of 'typicality' of real rights and articulate principles of unitary and absolute property. See, e.g. Article 516 on the differentiation of property; Article 526, enlisting the recognized forms of limited real rights (usufruct, servitudes and mortgages); Articles 544 - 546 on the definition and necessary content of absolute ownership, etc.

⁴⁰ BGB Paragraph 90, by providing that 'Only corporeal objects are things in the legal sense' can be seen as a substantial departure from the feudal conception of property, where most atypical rights had an intangible nature.

⁴¹ Practically all important modern codifications – not all of which were directly influenced by the French and German models – embrace a similar principle of unity in property. Rudden (1987) provides a comparative survey of the numerus clausus principle in the modern legal systems of the world, reporting that many Asian legal systems have adopted a basic rule according to which 'no real rights can be created other than those provided for in this Code or other a legislation' e.g., Korean CC 185, Thai CC 1298, and Japanese CC 175. Similar provisions exist in other systems of direct European derivation such as Louisiana CC 476-8, Argentine CC 2536, Ethiopian CC 1204 (2), and Israeli Land Law 1969 sections 2-5.

thereby ensuring the intelligibility of public records for notice and publicity purposes.⁴² It follows logically that any contract that constitutes or modifies a property situation in disregard of the taxonomy of real rights recognized by the legal system is only a source of contractual obligations.⁴³ But Gambaro (1995, p. 67) illustrates the paradox of allowing parties to enter into binding contractual obligations, yet preventing them from enjoying the benefits of those agreements. If the public record system does not allow atypical property rights to be recorded, freedom of contract is itself undermined, because the system withholds the mechanism – namely the recording system – that could transform an atypical property agreement between the parties from a personal obligation into a real right enforceable against third-party purchasers.

2. Physical Unity

Other basic principles of modern property law demonstrate the general tendency of legal systems to combat entropy and promote unity in property. In dealing with the physical partition of property, the rules of civil law systems symbolize the ideal of physical integrity of property. For instance, a large number of civil law systems jurisprudentially or legislatively recognize the owner's right to fence property as a symbolic prerogative of his sovereignty.⁴⁴ Furthermore, civil law systems address the problem of physical unity with rules restricting horizontal partitions of property building on the heritage of Roman legal systems that generally limited recognition of subsoil real rights, as suggested

⁴² The 'absence of notice' legal rationale purports that it would be difficult for a purchaser to know about 'fancies', or non-numerus clausus property interests. Rudden (1987) objects to this rationale. He thinks that a functioning recording system could reveal fancies to a purchaser. Further, notice is neither necessary nor sufficient to create valid property interests. For further analysis of this point, see Mattei (2000, pp. 91-92), who observes that the same restriction on the admissibility of recordable instruments does not exist in common law jurisdictions, where parties can create property rights with a much larger degree of autonomy (e.g., by means of the creation of a trust instrument).

⁴³ Rudden (1987, p. 243) notes that Argentina is the only country that articulated this important logical corollary in the form of a code provision: Argentine CC 2536.

by the Latin maxim: 'Cuius est solum eius est usque ad coelum et usque ad inferos' (whoever owns the land owns the property all the way to heaven and all the way to the center of the earth).⁴⁵

The theory and practice of property law regarding physical unity has undergone several changes over the centuries. Whenever recognized, the ad coelum rule presumes that someone who buys property unaware of any obstacle to its free use (bona fide purchaser) acquires priority over other claims on the land, be they for underground or surface resources.

In spite of the medieval departures from unified conceptions of property, most of the modern Civil codes of the 19th century reinstated the Romanistic conception of property disallowing horizontal forms of property fragmentation. In both the French Code of 1804 and the Italian Code of 1865 land could not be horizontally severed into multiple surface and subsurface estates, and legal title to the various land strata had to vest in a single owner. Early common law erected similar obstacles to the horizontal fragmentation of property⁴⁶ and, thanks to the work of Lord Coke in the early 17th century, the abbreviation 'ad coelum' became a term of art in English law.⁴⁷

⁴⁴ Paragraph 903 of the German BGB, granting the power of absolute disposition, similarly recognized by other codes and civilian courts. See also Mattei (2000, p. 123).

⁴⁵ The 'ad coelum' rule was first found in Gaius's *Institutiones*, and later reproduced in Justinian's *Digest* and *Institutiones*. The basic concept is that real property extends vertically all the way to hell (inferos) and heaven (coelum). Already in the Republican era of Roman law, however, the so-called grants ad aedificandum (which were later given full remedial protection through the actio de superficie) allowed the creation of horizontal surface rights that could be held by subjects other than the owner of the subsurface estate.

⁴⁶ Wenzel (1993) points out that the horizontal fragmentation of property was not permitted at early common law. She attributes this to two main reasons: (a) the popularity of the ad coelum rule in medieval English thinking and the dominance of absolutist theories of property; and (b) the practices of land transfer that, through the ritual of 'seisin' (resembling the traditio simbolica of the Roman law), required the symbolic conveyance of possession via the manual delivery of a stone or clump of soil taken from the land. The ritual of the traditio simbolica, Wenzel suggests, was not suitable to symbolize the transfer of title to subsurface rights or undiscovered mineral rights.

⁴⁷ The 'ad coelum' doctrine is still used in modern law in two main settings: one being in property law, to approach questions of adjoining ownership (e.g., cases of constructions hanging over the neighboring land, etc.); and in international law, to approach issues of territorial sovereignty over airspace. Most recently, the doctrine has been revived in public international law through the claims of equatorial states for their rights over the geostationary orbit (for satellites). Obviously, non-equatorial states oppose the applicability of the 'ad coelum' rule and invoke the application of a rule of first possession.

These constraints on the freedom of the parties were an important corollary of the principle of physical unity in property that led to the 18th century intellectual reaction against feudal property fragmentation, but they did not shape the ultimate approach to property that emerged in Continental Europe. In spite of the numerus clausus principle and the other formulations of the ideal of unitary property, the explicit prohibitions of the modern codes proved ineffective.⁴⁸ Property owners continued to partition their land into multiple surface and subsurface estates. Originally such agreements could not convey real title to the various land strata, but parties occasionally attempted to bypass this impediment by agreeing not to invoke accession rules against the titular owner of surface rights, should the informal surface owner decide to erect a building on the land.⁴⁹ The courts were initially reluctant to enforce the parties' agreements, which they found in open contravention of the unity rule. Over time, however, civil courts developed a more accommodating attitude and allowed such atypical forms of property fragmentation to survive in the shadow of the law.

The 20th century codes eventually abandoned the rule prohibiting the horizontal fragmentation of property. Starting with the German BGB of 1900⁵⁰ and the Italian Civil Code of 1942,⁵¹ civil law moved away from applying the principle of physical unity, reverting to the standards in effect prior to the modern codifications.

Any one or more of three practical reasons discussed below reversed the trend. First, horizontal fragmentation became so commonly tolerated that it no longer was exceptional, and unity became a

⁴⁸ As to the vertical limits of property, even in the early times, the appeal to the ad coelum rule was mostly symbolic and subject to several exceptions. The value of such symbolism, however, should not to be underestimated, given the interpretive force that is often associated with general principles in civil law systems.

⁴⁹ According to the accession rule, superficies solo cedit, absent such agreement, the owner of title could claim ownership to any construction erected on the land by third parties.

⁵⁰ BGB, Paragraphs 1012-17, which were later replaced by a special law of January 15, 1919, which provided a more explicit regulation of the matter.

⁵¹ Article 952 of the Italian Civil Code of 1942 recognizes surface rights as an enforceable real right.

symbolic legal fiction. Enforcing a rule of unity under such circumstances risked disrupting a peaceful status quo in order to confront the unavoidable dilemma of deciding which of the two good faith parties should acquire title to the property.⁵² Second, the risks of horizontal forms of property fragmentation are limited: few parties engage in such partitions, and in practice no more than two layers – surface and subsoil – are likely. This limited form of fragmentation does not raise serious strategic problems or enforcement costs, given the bilateral monopoly of the two fragmented owners under the circumstances. Third, the practical need for regulating mineral rights and rights in the exploitation of underground resources, as well as increased value for their exploitation, prompted the gradual abandonment of the older dogma.

Mid-20th century civil law scholars criticized abandoning the rule of physical unity because doing so violated the modern ideal of unified property. Horizontal property fragmentation appeared antithetical to traditional notions of property ownership that created in a landowner absolute, indivisible rights to a vertical space extending usque ad coelum, usque ad inferos, as well as creating mutual constraints on surface and subsurface ownership.⁵³

3. Legal Unity

A third principle of Western law – granting the owner absolute power to dispose of his property – is also closely related to the concept of unity in property, although with quite different implications. All the main European codes enunciate this principle. For instance, Article 544 of the French Civil

⁵² Conflicting claims of building and land owners would have been resolved according to the civilian rules of accession, according to which the owner of the land would acquire title to the building erected by third parties (i.e., superficies solo cedit) with a duty to compensate the latter for the lesser amount between the incremental value of the property and the cost of the building. The default solution under the code may have occasionally proven unfair, given the greater subjective value of a building for those who designed and built it, compared to the average market value or the subjective valuation of the unwilling owner of the land.

Code states, 'Ownership is the right to enjoy and dispose of things in the most absolute manner,' a provision included almost verbatim in the Italian Civil Code of 1865. Similarly, Paragraph 903 of the German BGB affirms that the owner of an object 'may deal with the thing as he pleases and exclude others from any interference.'

While these statements appear uncontroversial on their face, they become difficult to implement with joint ownership. The principle of absolute disposition indeed becomes an oxymoron when two or more individuals jointly hold decision rights. In addressing this problem, legal systems have historically adopted rules that facilitated the reunification of use and placed exclusion rights in the hands of a single individual. The common law achieved these two objectives by making it difficult to create joint tenancy (a legal fiction in which two or more people are regarded as a single owner) and relatively easy to destroy the arrangement. A joint tenancy required the owners to demonstrate the four 'unities', namely: (a) time (they acquired the property at the same time); (b) title (they all signed the same instrument); (c) interest (they owned identical rights); and (d) possession. If any of these elements were missing, then the joint tenancy could not be created.

Along similar lines, anyone who found himself owning something jointly with others could cause the common property to be divided, in keeping with the Latin maxim 'nemo invitus ad communionem compellitur' (no one can be forced to have common property with another). Division could be done unilaterally. All one joint tenant had to do was convey his interest to a third party and the joint tenancy was severed, reverting to a tenancy in common and allowing owners to convey or devise their interests to third parties. Some early cases found that merely expressing the intent to sever the joint tenancy was sufficient to do so. If the tenants could not agree on the management of the property, another option was to petition for partition, in which case the court would either divide up the

⁵³ Horizontal partition may prevent valuable improvements, such as leveling the ground for agricultural or construction purposes, excavating for proper drainage, or simply creating a well or a wine cellar, etc. For a historical survey of the

property or order it sold and divide the proceeds among the owners. Very similar rules are present in civil law jurisdictions to minimize the hold-up power of joint owners in the use of the joint property. In application of the principle of legal unity in property, these systems introduced mechanisms that were easily triggered to allow owners greater autonomy in disposing of their property, even when others had rights over the same land.

II. VARIATIONS IN MODERN PROPERTY LAW

As discussed above, in the modern era, legal systems around the world have in different ways manifested a general reluctance to recognize atypical property agreements as enforceable real rights.⁵⁴ In recent decades, however, courts and legislatures in both civil and common law jurisdictions, attuned to the modern needs of land developers and property owners, have recognized new property arrangements.⁵⁵ The clearest example of this gradual expansion of standard property arrangements in civil law jurisdictions can be found in the area of covenants that attach to the title of property (“run

evolving conceptions of physical unity in property, see also Bianca (1999).

⁵⁴ Recently, common law courts have been relatively creative in figuring out ways to enforce contracts that create covenants designed to protect existing amenities in residential areas. Furthermore, legal systems occasionally will invent a new form of property. Despite these periodical innovations, this area of the law remains the most archaic. Rose (1999, pp. 213-214) observes that the common law system of estates in land now seem almost risibly crude and antiquated. As the author ironically points out, references to the 'fee tail' seldom fail to bring a smile.

⁵⁵ Yiannopoulos (1983) notes the inadequacy of building and zoning ordinances to satisfy the needs of local property owners (e.g., for the preservation of the subdivision style, etc.). He also mentions that land developers have, since the turn of the century, imposed contractual restrictions limiting the use of property to enhance property values (e.g. restricting use to certain specified purposes, prohibiting the erection of certain types of buildings, or specifying the material or the colors that may be used in the construction). Rudden (1987) observes, along similar lines, that although standard possessory interests involve exclusive and continuous possession, individuals may seek to acquire alternate interests such as a time-share, which is exclusive possession for repeated, short intervals. He thinks that servitude interests have seen the most innovation of late, and that security interests have seen the least innovation.

with the land”) and that occasionally create new sui generis real rights. A real covenant is a promise to do, or refrain from doing, something that is connected to land in a legally significant way.⁵⁶ Under traditional common law, the rights and duties associated with contracts were not assignable (Corbin, 1926) because parties to the original agreement did not have the right to bind third parties to adhere to their arrangement. Accordingly, the benefits and burdens of the original covenants did not transfer with the interest in the land. In many situations, this frustrated the purpose of creating a real covenant in the first place.

Due to the perceived net benefits in having the rights and burdens of a real covenant run with the land, courts gradually created a new body of law to overcome the obstacles posed by traditional property and contract theories.⁵⁷ Almost without exception, however, legal systems implementing these innovations have created atypical regimes to govern remedial protection and regulate these new rights – rules that diverge substantially from the traditional principles governing property or contracts. Commentators generally attribute these divergences to mere historical accidents (Dwyer and Menell 1998, p. 760; Yiannopoulos 1983). Contrary to the common wisdom in the literature, I suggest that these anomalies are not haphazard.

In order to protect these newly recognized real rights, courts have developed an elaborate set of requirements to minimize the long-term effects of the non-conforming fragmentation of property, adopting a set of rules that differ from traditional property or contract law. Legal systems instead

⁵⁶ Real covenants and easements differ from one another in various respects. An affirmative real covenant is a promise to do an affirmative act (e.g., a landowner’s agreement with her homeowner’s association to pay yearly fees, or a landowner’s agreement to keep his lawn well trimmed). An affirmative easement, by contrast, is a right held by the owner of the benefiting land, called dominant estate, to use another party’s land, called servient estate. There is no affirmative obligation for the servient estate owner to do anything. As it is generally explained, the servient owner only has a ‘negative duty’ to refrain from interfering with the other party’s rights.

⁵⁷ Under the modern contract doctrine, an assignee is liable for pre-existing contractual obligations only if he or she expressly assumes those obligations. The problem of the law of real covenants is thus principally concerned with situations where the assignee has not expressly agreed to assume the covenants of the previous owner. Enforcing these real covenants as mere contracts would often frustrate the goals pursued by the parties, given the frequent objective to allow the burdens and benefits of real covenants to pass to the successive owners of the underlying estates.

balance the need to mitigate entropy in property by creating perpetual restrictions on the use and alienability of property with the demands of landowners and property developers wishing to exercise their contractual freedom to dispose of their property as they deem appropriate. Various legal traditions have employed different instruments to achieve this goal. For example, under modern French law, courts do not recognize atypical property covenants as sources of real rights, though they allow parties to approximate a real right by drawing upon the notion of transferable obligations. Thus, French cases have construed contracts between property owners as sources of obligations that are effective against third persons.⁵⁸ In Germany and Greece, atypical property covenants are also not enforced as real rights, but, as Yiannopoulos (1983) points out, allowing the contractual remedies to extend beyond the original parties to the covenant produces similar effects.

Interestingly, legal systems often encourage open access to common property (e.g., roads, navigation, communications, ideas after the expiration of intellectual property rights, etc.),⁵⁹ and in other cases the legal system creates and facilitates fragmentation. For instance, the social planner uses entropy to his benefit by using conservation easements and the fragmentation (e.g. multiplication) of administrative agencies overseeing of land development to slow the pace of suburban development.⁶⁰ In yet other instances, the owners themselves structure the non-conforming property arrangements.⁶¹

⁵⁸ Yiannopoulos (1983) observes that the French Supreme Court (e.g., Civ., Dec. 12, 1899, D. 1900.1.361, with a note by Gény) recognized the effect against third parties of a property covenant relieving the operator of a mine from liability for damage to the surface. See also Bergel (1973).

⁵⁹ See Rose's seminal 'Comedy of the Commons' (1986), describing the origins of, and justifications for, common law doctrines and statutory strategies that vest collective property rights in the 'unorganized' public as a means of optimal resource management. Most recently, Henry Smith (2000) introduced the notion of semi-commons. These are property arrangements consisting of a mix of both common and private rights, with significant interactions between the two, observing that this property structure allows the optimizing of the scale of different uses of the property (e.g., larger-scale grazing, smaller-scale grain growing, etc.).

⁶⁰ The idea of the anticommons in environmental regulation is explored further in Mahoney (2002).

⁶¹ Most recently, Dagan and Heller (2001) present the case of the liberal commons as a compelling illustration of efficient commons. Less obviously, we could imagine cases of purposely chosen anticommons. Examples of purposeful dysfunctional property fragmentation can be found in situations where unified property owners want to generate

Although problematic as a rule, non-conforming partitioning of property rights may be somewhat sensible in achieving specific policy goals or other objectives that property owners desire. These idiosyncratic arrangements are both a reflection of the individual's right to freedom of contract and a legitimate policy instrument for the urban planner. In sum, respecting individual autonomy while minimizing the undesirable deadweight losses that could result from these arrangements is the critical goal.

Conclusion

In this essay, I have traced the origin and evolution of property rights regimes in light of the changes to economic systems since the earliest days of human civilization. The foundations for this study lay to a certain extent in the work of Demsetz (1967) and other philosophical minds such as Hegel ([1821] 1942) and Smith ([1776] 1986), who recognize that when resources are scarce, human societies formulate property rights to allocate use and regulate production. The development of property rights over time is nothing if not dynamic. The early stages of property – the ages of hunters, pastures and shepherds, and agriculture – reveal the origins of some central tenants of modern property such as commonality (i.e., sharing mechanisms), the right to exclude, customary restrictions, and spatial property notions. In the feudal era, the juxtaposition of physical unity and legal disunity allowed for a primitive form of centralized planning for agricultural resources, but then rapidly propelled Western societies towards revolutionary changes in property rights as economies became more complex with changing needs. Absolute rights emerged from the feudal era as individuals gained rights to use and transfer land. However, in the pre-modern era, Western societies struggled with the

anticommons problems as a way to control the use of their property beyond the time of their ownership. An interesting real life example is offered by the case of nature associations and mountain-hiking clubs that utilize anticommons-type fragmentation as a way to ensure long-term or perpetual conservation of the land in its current undeveloped state.

extent to which functional, physical, and legal unity ought to restrict an individual's bundle of rights in property.

Finally, in modern times, economics remains useful to examine the continuing changes in property rights regimes. Covenants, used frequently by land developers, have emerged as a medium for owners to exercise contractual freedom yet preserve unity. As the modern economy changes, so too will Western systems of property.

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