

The New Servitudes

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In the age of electronic commerce, consumers routinely acquire intangible products without engaging in any direct human interaction. These products—computer programs, digital music, et cetera—often arrive bearing terms that purport to limit the sticks in the consumers’ bundles of rights in ways that depart from the background limitations imposed by intellectual property law. For example, a consumer who has downloaded a computer program from the Internet might be presented with a screen of text imposing myriad restrictions on how the program may be used; installation commences only when the consumer clicks “I agree.” Courts in the United States have increasingly enforced such restrictions—labeling them “click-wrap licenses” and applying to them the same contractual concepts that govern face-to-face exchanges of promises. Similar licensing approaches—albeit with quite different substantive terms—have been extended into the realms of “free software” and “free culture.”

The law of tangible property offers a different lens through which to view these contemporary techniques for distributing and controlling intangible products. When someone buys land that is purportedly subject to use restrictions imposed by a prior owner, those restrictions are sometimes enforced as “servitudes”—non-possessory property interests that attach to land and impose their

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I serve on the Board of Directors of Creative Commons, an organization discussed below. The views expressed about Creative Commons are my own.

restrictions and obligations on generation after generation of landowners. Like click-wrap licenses and similar techniques of the digital age, use restrictions imposed by servitudes bind remote purchasers with whom the beneficiaries of the restrictions may have no direct relationship. They do not arise from any human communication, but instead “run with” the burdened assets.

Although servitudes are a familiar feature of contemporary real property law, they have long encountered judicial skepticism that has generated a host of doctrinal complications. This skepticism has been even more pronounced in the context of servitudes applied to items of tangible personal property. But it finds little expression in the current contractual approach to interpreting licenses attached to intangible products.

In this Article I develop a comprehensive account of the evolving jurisprudence of servitudes as applied to both land and personal property, identifying the sources of traditional servitude skepticism in order better to evaluate the new generation of running restrictions on intangible informational goods. I apply the lessons I draw from the old servitudes to paradigmatic examples of contemporary licensing practices—including Microsoft end-user license agreements, the Free Software Foundation’s General Public License, and Creative Commons licenses. The lessons I draw from the old servitudes bring the problems—and also the promise—of these new servitudes into sharp focus, providing a new framework within which to analyze emerging electronic commerce practices while contributing doctrinally and historically grounded insights into the ongoing debate about the proper relationship between intellectual property and the public domain.

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INTRODUCTION

Anglo-American common law has long been ambivalent about servitudes—those non-possessory property interests (including easements, real covenants, and equitable servitudes) that attach to land and impose their restrictions and obligations on generation after generation of landowners. On the one hand, servitudes can enhance land values and solve externality problems by allowing landowners voluntarily to commit to long-term coordination of land uses. And some types of venerable servitudes—easements that allow one neighbor to pass over the land of another, for example—are enforced without much fuss. On the other hand, courts and commentators have long worried about the potential for servitudes to bind successors who have not knowingly accepted them, about the

prospect that long-running servitudes will become obsolete over time, and about the possibility that servitudes themselves will impose external harms on third parties. Some attempts to use the servitude mechanism to rearrange the sticks in the property bundle have therefore been greeted with judicial hostility, resulting in a doctrinal thicket of requirements and limitations. This hostility has co-existed somewhat uneasily with the law's general enthusiasm for freedom of contract, whereby all sorts of voluntarily undertaken restraints and obligations are enforceable as a matter of course.¹

Tensions within the law of servitudes have resulted in doctrinal ebb and flow over the course of the last two centuries. Generally speaking, the trend has been toward recognition of a wider variety of servitudes and abandonment of some of the more convoluted common law doctrinal requirements. This doctrinal liberalization has been both influenced by and reflected in the recent *Restatement (Third) of Property: Servitudes*.²

The new *Restatement* does not address one recurring question about the servitude mechanism, however: whether it should be applicable to assets other than land. Can the manufacturer of a piece of medical equipment, for example, attach a restriction to that equipment that specifies how anyone who acquires it may use it?³ Several scholars have argued that the same doctrinal liberalization that has occurred in the realm of land servitudes should be applied to personal property as well.⁴ On the other hand, a compelling literature has emerged over the past decade that rationalizes and defends the old common law limits on servitudes,⁵ more generally praises standardization⁶ and consolidation of prop-

1. On this tension see generally, Gregory S. Alexander, *The Dead Hand and the Law of Trusts in the Nineteenth Century*, 37 STAN. L. REV. 1189, 1258 (1985); Richard Epstein, *Notice and Freedom of Contract in the Law of Servitudes*, 55 S. CAL. L. REV. 1353 (1983); Susan F. French, *The Touch and Concern Doctrine and the Restatement (Third) of Servitudes: A Tribute to Lawrence E. Berger*, 77 NEB. L. REV. 653, 659 (1998); Stewart E. Sterk, *Freedom from Freedom of Contract: The Enduring Value of Servitude Restrictions*, 70 IOWA L. REV. 615 (1985).

2. RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 3 (2000). Although the new Restatement abandons many traditional limitations (including, for example, the touch and concern requirement), it adopts alternative mechanisms for addressing many of the same concerns. See, e.g., French, *supra* note 1, at 659–66 (detailing the ways in which the new Restatement retains the principles of the touch and concern doctrine).

3. See *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708–09 (Fed. Cir. 1992) (holding that a patent holder may impose post-sale restrictions on use of a patented medical device).

4. Zechariah Chafee, Jr., *Equitable Servitudes on Chattels*, 41 HARV. L. REV. 945 (1928) [hereinafter Chafee, *Equitable Servitudes*]; Glen O. Robinson, *Personal Property Servitudes*, 71 U. CHI. L. REV. 1449 (2004). Chafee was less enthusiastic about personal property servitudes when he later revisited the topic. See Zechariah Chafee, Jr., *The Music Goes Round and Round: Equitable Servitudes and Chattels*, 69 HARV. L. REV. 1250 (1956) [hereinafter Chafee, *Music*].

5. E.g., Julia D. Mahoney, *Perpetual Restrictions on Land and the Problem of the Future*, 88 VA. L. REV. 739 (2002).

6. E.g., Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1 (2000) [hereinafter Merrill & Smith, *Optimal Standardization*]; Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773 (2001) [hereinafter Merrill & Smith, *Property/Contract*].

erty rights,⁷ and resists the trend to accommodate proliferating and novel restrictions on use and transfer of assets under the guise of freedom of contract.

This recent scholarly attention to the common law servitude doctrines and their applicability to assets other than land is motivated in part by developments in intellectual property and electronic commerce and, in particular, by various licensing practices adopted by developers of computer software and other intangible works.⁸ Licenses that purport (via “shrink-wrap,” “click-wrap,” and similar techniques) to limit how recipients down a chain of distribution may use intangible works are, in effect, servitudes.⁹ Take, for example, the license that is presented to anyone who downloads a copy of Microsoft’s Vista operating system, prompting the recipient to click “I agree” before the software will install.¹⁰ As with more familiar land servitudes, the restrictions contained in this license aim to run with the intangible work to which the license attaches, and thus to bind every user of that work. Some observers use the servitude characterization to call this and similar licensing practices into question.¹¹ To others, judicial enforcement of servitude-like licenses is consistent with the liberalizing attitude toward land servitudes and rightly represents the preeminence of freedom of contract over hostility to restraints on resource use and transfer.¹² Both the champions and the skeptics tend to extend their assessments to both commercial software licenses like Microsoft’s End User License Agreement (EULA) and to the licenses promulgated as part of the “free software” and “free culture” movements.¹³

The literature likening contemporary licensing practices to servitudes offers a valuable new way to conceptualize the ongoing debate over the desirability and

7. E.g., Michael Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (1998).

8. See generally Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 42 (arguing that the “recent move toward increased use of contract principles in areas like electronic commerce fits in well” with their information-cost theory of the optimal standardization of property rights).

9. Several observers have made this point. See, e.g., Niva Elkin-Koren, *What Contracts Cannot Do: The Limits of Private Ordering in Facilitating a Creative Commons*, 74 FORDHAM L. REV. 375, 407–08 (2005); William W. Fisher III, *Property and Contract on the Internet*, 73 CHI.-KENT L. REV. 1203, 1211 (1998); Wendy J. Gordon, *Intellectual Property as Price Discrimination*, 73 CHI.-KENT L. REV. 1367, 1367–68 & nn. 1–2 (1998); Thomas M.S. Hemnes, *Restraints on Alienation, Equitable Servitudes, and the Feudal Nature of Computer Software Licensing*, 71 DENV. U. L. REV. 577 (1994); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 121, 148 (1999); Michael J. Madison, *Reconstructing the Software License*, 35 LOY. U. CHI. L.J. 275, 306 (2003); Margaret Jane Radin, *Humans, Computers, and Binding Commitment*, 75 IND. L.J. 1125, 1138–39 (2000); Robinson, *supra* note 4, at 1478; John A. Rothchild, *The Incredible Shrinking First-Sale Rule: Are Software Resale Limits Lawful?*, 57 RUTGERS L. REV. 1, 45 (2004).

Note, however, the distinctions drawn in Robert P. Merges, *The End of Friction? Property Rights and Contract in the “Newtonian” World of On-Line Commerce*, 12 BERKELEY TECH. L.J. 115 (1997).

10. See *infra* notes 213 and accompanying text.

11. E.g., Elkin-Koren, *supra* note 9; Radin, *supra* note 9.

12. E.g., Robinson, *supra* note 4.

13. E.g., Elkin-Koren, *supra* note 9; Robert W. Gomulkiewicz, *How Copyleft Uses License Rights To Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 HOUS. L. REV. 179 (1999); Radin, *supra* note 9; Robinson, *supra* note 4.

enforceability of licenses that purport to impose restrictions on downstream users of software and other intangibles—and to the related debate about the proper relationship between intellectual property and the public domain.¹⁴ But the analysis to date has been incomplete. Some commentators observe the superficial similarity between servitudes and contemporary licensing mechanisms and suggest that similar doctrinal implications should follow, but without fully exploring whether the similarity in fact extends to those features of servitudes that have traditionally triggered skepticism.¹⁵ Others offer somewhat richer accounts of the jurisprudence of servitudes and its rationales but then apply the lessons they draw from that account to large swaths of licensing practice—missing important distinctions that might be relevant to the applicability of the servitude analysis.¹⁶ In this Article I offer the first fine-grained assessment of a variety of contemporary licensing practices in light of lessons distilled from a comprehensive examination of servitude jurisprudence.

In Parts I and II, I trace the jurisprudence of servitudes on land and personal property, respectively, in order to develop a full account of the concerns that have animated the limiting doctrines applied to those servitudes. I articulate a new three-part typology of servitude concerns: those related to notice and information costs, those related to dead-hand control and other aspects of the “problem of the future,” and those related to harmful externalities.

Within these three constellations of concerns about servitudes I identify specific features that are especially likely to make servitudes problematic—features including the remote relationship between the burdened and benefited parties, the durability and ubiquity of the restrictions imposed, the fragmentation of rights to control use of a single resource, the potential lack of salience to purchasers, and the insulation from effective competition that is possible where servitudes are attached to goods with unique qualities or are ubiquitous across entire markets. These features are all related to the core characteristic of servitudes—that they run with the assets to which they attach and bind remote owners of those assets. But different servitudes exhibit these features to different degrees; different servitudes are amenable to different mechanisms for resolving the problems I identify, and some servitudes, but not others, are

14. On the relationship between intellectual property and the public domain, see generally, LAWRENCE LESSIG, *FREE CULTURE* (2004); LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2001); JESSICA LITMAN, *DIGITAL COPYRIGHT* (2001); Yochai Benkler, *Freedom in the Commons: Towards a Political Economy of Information*, 52 DUKE L.J. 1245 (2003); James Boyle, Foreward, *The Opposite of Property*, LAW & CONTEMP. PROBS., Winter/Spring 2003, at 1; Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965 (1990); Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, LAW & CONTEMP. PROBS., Winter/Spring 2003, at 147; R. Polk Wagner, *Information Wants To Be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995 (2003).

15. E.g., Radin, *supra* note 9, at 1138–39.

16. E.g., Robinson, *supra* note 4, at 1508 n.215 (“There is no difference between a free GPL and a Microsoft End-User License Agreement. In both instances the purpose of the license is to create a servitude on the software.”).

entangled with intellectual property rights in ways that complicate the standard servitude analysis. All of this variation helps to explain the intricacies of the doctrinal rules that enforce some servitudes but not others.

In Part III, I use the account I develop in Parts I and II to return to my central questions: Are the concerns that have animated servitude skepticism relevant to contemporary licensing practices? Do licenses restricting the use of intangible works—some of which are also subject to intellectual-property-based restrictions—in fact share features that have raised the concerns with notice, the problem of the future, and harmful externalities that have driven servitude jurisprudence? I find that some of the concerns that have animated skepticism about servitudes on land and personal property may in fact be even more relevant to contemporary licensing practices than they are in the contexts in which they originally arose. But the new servitudes are far from monolithic. Some are more problematically servitude-like than others, as I demonstrate by exploring paradigmatic examples of contemporary licensing practices—including the Microsoft Vista EULA, the Free Software Foundation’s General Public License, and the “free culture” licenses promulgated by Creative Commons. The lessons I draw from the old servitudes bring the problems—and also the promise—of these new servitudes into sharp focus, providing a novel framework within which to analyze emerging electronic commerce practices while contributing doctrinally and historically grounded insights into the ongoing debate about the proper relationship between intellectual property and the public domain.

I. LAND SERVITUDES

I begin my account of the jurisprudence of servitudes in the realm of real estate. Land servitudes are a familiar feature of contemporary real property law, with a long and venerable pedigree. But throughout their history, land servitudes have encountered judicial skepticism and doctrinal complexity, the story of which helps to illuminate possible problems with the new generation of servitudes on intangible informational goods. Out of my account of the jurisprudence of land servitudes, I develop in this Part a new categorization of the concerns that have motivated servitude skepticism and a taxonomy of servitude features that trigger those concerns. Subsequent Parts apply this framework to personal property servitudes and to the new generation of servitudes on intangible informational resources.

A. LAND SERVITUDE SKEPTICISM

A servitude is a non-possessory property interest that gives its holder the right to use an asset (typically land) in specified ways, or to object to specified uses of it, or to insist on specified behavior connected to it. The asset is encumbered by the servitude such that the servitude’s burdens “run with” the asset, “pass[ing] automatically to successive owners or occupiers.”¹⁷ Unlike a mere contractual agreement to, say, refrain from blocking your neighbor’s satellite dish, a servitude is enforceable against

17. RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 1.1 (2000).

successors in interest. Therefore, if you grant your neighbor an effective servitude she will be able to enforce the restriction against you and subsequent owners of your land.¹⁸ The benefit of a servitude typically runs to successors as well—from your neighbor to the next owner of her house.

The land-use planning needs of the Industrial Revolution triggered the development of modern Anglo-American servitude law.¹⁹ Increased urban density and the potential for conflicts between neighboring property owners prompted a variety of attempts to coordinate land uses through durable private arrangements.²⁰ Nineteenth-century English courts reacted with ambivalence, however, establishing a complicated scheme of servitude classifications and accompanying doctrinal limitations.

Servitudes came to be classified into the three major categories of easements, real covenants, and equitable servitudes, with each category subject to convoluted rules limiting formation, subject matter, and enforceability²¹; for example, negative easements were disfavored and real covenants required “horizontal privity.” In *Keppell v. Bailey*,²² Lord Brougham famously expressed hostility toward servitudes that strayed from these narrow confines:

[I]t must not therefore be supposed that incidents of a novel kind can be devised and attached to property at the fancy and caprice of any owner [G]reat detriment would arise and much confusion of rights if parties were allowed to invent new modes of holding and enjoying real property, and to impress upon their lands and tenements a peculiar character, which should follow them into all hands, however remote. Every close, every messuage, might thus be held in a several fashion; and it would hardly be possible to know what rights the acquisition of any parcel conferred, or what obligations it imposed.²³

18. See, e.g., Susan F. French, *Toward a Modern Law of Servitudes: Reweaving the Ancient Strands*, 55 S. CAL. L. REV. 1261, 1264 (1982).

On the complicated and evolving issue of when possessors who are not owners succeed to the benefits and burdens of servitudes, see RESTATEMENT (THIRD) OF PROP.: SERVITUDES ch. 5, introductory note (2000); GERALD KORNGOLD, PRIVATE LAND USE ARRANGEMENTS: EASEMENTS, REAL COVENANTS AND EQUITABLE SERVITUDES §§ 5.03, 9.14(b)–(c) (2d ed. 2004).

19. Easements existed in Roman law and running covenants were recognized as early as *Spencer's Case* in 1583. But “[u]ntil the Industrial Revolution greatly increased the use of servitudes, the common law did not develop a general theory of easements or servitudes.” Susan F. French, *Design Proposal for the New Restatement of Property—Servitudes*, 21 U.C. DAVIS L. REV. 1213, 1214 (1998); see also Uriel Reichman, *Toward a Unified Concept of Servitudes*, 55 S. CAL. L. REV. 1177, 1183 (1982).

20. See, e.g., A.W.B. SIMPSON, A HISTORY OF THE LAND LAW 262 (2d. ed. 1986); French, *supra* note 18, at 1262; James L. Winokur, *The Mixed Blessings of Promissory Servitudes: Toward Optimizing Economic Utility, Individual Liberty, and Personal Identity*, 1989 WIS. L. REV. 1, 13.

21. See generally French, *supra* note 18 (reviewing the rules governing the three types of servitudes).

22. (1834) 39 Eng. Rep. 1042 (Ch.).

23. *Id.* at 1049. As I explain below, *Keppell* was superseded to some extent by the landmark case of *Tulk v. Moxhay*, (1848) 41 Eng. Rep. 1143.

Tracing the evolution of modern servitude law from its origins in nineteenth-century England reveals several rationales for this type of hostility and the limiting doctrines that it produced. I organize these rationales into three broad categories: notice and information costs, “the problem of the future,”²⁴ and harmful externalities.

In light of various developments in the law of land servitudes (and the surrounding legal landscape), some of these concerns seem increasingly anachronistic in the context in which they originally arose, but they may remain relevant to the new generation of servitudes that I ultimately aim to assess.

B. NOTICE AND INFORMATION COSTS

1. Notice Problems and Early Doctrinal Solutions

A dominant rationale underlying the traditionally cautious judicial attitude toward servitudes is concern about insufficient notice. Long-standing limitations on land servitudes can be explained at least in part by notice concerns arising from the remote and indefinite relationship between burdened and benefited parties. And the gradual erosion of those limitations can be explained in part by the development of alternative methods for ensuring notice.

Unlike a bilateral contractual obligation, based on a relationship of contractual privity between promisor and promisee, enforcement of a servitude against a remote owner of a burdened asset is not based upon any interaction between that downstream owner and the beneficial owner of the servitude. Indeed, when the servitude is initially created, the parties to whom it will eventually run are unknown or “indefinite”—a characterization that Thomas Merrill and Henry Smith (building on Wesley Hohfeld) associate with in rem property rights more generally.²⁵ The remoteness and indefiniteness of the parties to a servitude raise the prospect that there will in fact be no clear notice to the burdened party (nor, for that matter, to a downstream beneficiary) and thus no meeting of the minds about the nature and desirability of the servitude. If servitudes were nonetheless enforceable without regard to notice, purchasers would be vulnerable to bad bargains—paying more for servitude-encumbered assets than they would have paid had they known about the servitudes. This result would be inefficient, unfair to surprised purchasers, and ultimately harmful to the market because would-be purchasers would hesitate to buy without time-consuming and sometimes futile investigation to uncover hidden encum-

24. I borrow this useful terminology from Julia Mahoney. See *infra* notes 66–72 and accompanying text.

25. Merrill & Smith, *Property/Contract*, *supra* note 6, at 781–86; Wesley Newcomb Hohfeld, *Fundamental Conceptions as Applied in Judicial Reasoning*, 26 YALE L.J. 710, 718 (1917) (“A multital right, or claim, (right *in rem*) is always *one* of a large *class* of *fundamentally similar* yet separate rights, actual and potential, residing in a *single* person (or single group of persons) but availing *respectively* against persons constituting a very large and indefinite class of people.”).

branches.²⁶

Servitude doctrine has been consistently attentive to concerns with insufficient notice. Consider, for example, the treatment of easements. When English courts first struggled with easement questions, there was no system for publicly recording easements and other interests in land to provide notice to subsequent purchasers. So courts promoted notice indirectly, through doctrinal limitations that disfavored especially unnoticeable easements.²⁷

Among the earliest easements recognized at common law were rights of way—affirmative rights to pass across the land of the servient estate. Such an easement will often reveal itself to an attentive purchaser, who can observe the passage of the easement holder and the path he treads across the right of way. Negative easements—giving rights to object to some use of the servient estate—are not so easy to observe.²⁸ For example, the agricultural use of land in a rural area would not by itself put a prospective purchaser on notice of an easement prohibiting non-agricultural use. The English courts avoided this type of surprise by refusing to enforce negative easements outside of a few long-standing categories.

The English courts also required that the benefit of an easement be “appurtenant,” meaning that it attaches to a specific parcel of land (the “dominant tenement”). They refused to enforce easements “in gross,” which benefit a person or entity without regard to land ownership.²⁹ This appurtenance requirement, like the limits on negative easements, promoted notice. Appurtenant easements, which often benefit land that neighbors the servient estate, are easier to observe—and their beneficiaries are easier to identify—than easements that benefit people who may have no presence in the neighborhood or connection to the land (whose remoteness, in other words, is especially pronounced).³⁰

Some running restrictions on land use that were disallowed by the English courts as easements could be imposed by way of “real covenants”—written

26. Cf. Epstein, *supra* note 1, at 1353–55 (arguing that “the only need for public regulation, either judicial or legislative, is to provide notice by recordation of interests privately created”). But cf. Robinson, *supra* note 4, at 1487 (arguing that “the information cost problem will be solved in most cases even without a legal rule requiring notice”).

27. See, e.g., Carol M. Rose, *What Government Can Do for Property (and Vice Versa)*, in *THE FUNDAMENTAL INTERRELATIONSHIPS BETWEEN GOVERNMENT AND PROPERTY* 209, 214 (Nicholas Mercuro & Warren J. Samuels eds., 1999) (“If you and your neighbor agree to place conditions on your respective properties, the courts will not hold subsequent purchasers to your conditions, unless the conditions themselves are obvious either through direct observation or through registration in the land record system.”).

28. See JESSE DUKEMINIER ET AL., *PROPERTY* 736 (6th ed. 2006); Epstein, *supra* note 1, at 1357; Reichman, *supra* note 19, at 1190.

29. See SIMPSON, *supra* note 20, at 263 & n.79 (citing cases).

30. See French, *supra* note 18, at 1286–87; see also CHARLES E. CLARK, *REAL COVENANTS AND OTHER INTERESTS WHICH “RUN WITH LAND”* 73–74 (1929) (regarding easy identification of holders of appurtenant easements).

promises intended to bind both a landowner and his successors in interest.³¹ Real covenants with running burdens had been recognized at least since *Spencer's Case* in 1583.³² But concerns with notice again contributed to severe limitations on the usefulness of this device. Covenant burdens could be enforced against successors only if the burdens "touched and concerned" the servient estate³³ and only if the original parties were in "privity of estate." The touch and concern requirement promoted notice by connecting covenants to the land and thus making them relatively easy to discover upon physical inspection.³⁴ As for the privity requirement, *Spencer's Case* suggested, and later English cases confirmed, that it was satisfied only by a landlord-tenant relationship.³⁵ Promises made by landlords and tenants could thus be enforced by and against successors in interest. But buyers and sellers of land, or owners of neighboring parcels, could not similarly make the burdens of their promises run. This restrictive privity requirement again served to guard against the imposition of hidden burdens and obligations. A buyer or assignee could discover promises between landlord and tenant by examining the lease.³⁶ Other types of covenants might be more difficult to uncover.

In the landmark 1848 case of *Tulk v. Moxhay*,³⁷ the Court of Chancery took a more direct approach to the notice problem.³⁸ *Tulk* established a new and more accommodating mechanism by which running land-use restrictions could be imposed: the equitable servitude. Like a real covenant, an equitable servitude is created by a promise regarding the use of land, which the parties intend to run to subsequent purchasers of the burdened estate. But horizontal privity is not required. Instead, the notice problem is addressed directly: equitable servitudes are only enforceable against successors who acquired the land with notice of the servitude.³⁹

31. See French, *supra* note 18, at 1270 (noting that writing, manifesting intent to bind or benefit successors, is required for real covenant to run). Real covenants could impose affirmative burdens (for example, an obligation to maintain a fence) as well as negative restrictions. *Id.* at 1269 & n.41.

32. See, e.g., Reichman, *supra* note 19, at 1188 n.43.

33. And the benefit had to touch and concern the dominant estate. See French, *supra* note 18, at 1271.

34. See Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. (SUPP.) S373, S402 (2002) (noting that servitudes touching and concerning the land "are much easier to verify upon physical inspection of property"). For a discussion of the "touch and concern" requirement, see generally French, *supra* note 18, at 1289–92.

35. See *Keppell v. Bailey*, (1834) 39 Eng. Rep. 1042, 1048 (Ch.); *Webb v. Russell*, (1789) 100 Eng. Rep. 639 (K.B.); see also DUKEMINIER, *supra* note 28, at 741.

36. Reichman, *supra* note 19, at 1219; French, *supra* note 18, at 1292.

37. (1848) 41 Eng. Rep. 1143.

38. See generally SIMPSON, *supra* note 20, at 256–60 (describing development of English case law before and after *Tulk*).

39. As Lord Cottenham explained in *Tulk*, "the question is . . . whether a party shall be permitted to use the land in a manner inconsistent with the contract entered into by his vendor, and with notice of which he purchased." *Tulk*, 41 Eng. Rep. at 1144.

2. Alternative Solutions to the Problem of Insufficient Notice

The early English servitude law thus demonstrates both the importance of notice and the various ways in which notice can be achieved. Doctrines that limit the subject matter of servitudes to those that are easy to discover, such as “touch and concern,” the appurtenance requirement, and horizontal privity, represent one way to ensure notice. Simply requiring a showing of adequate notice before enforcing a servitude, as in *Tulk*, is another.⁴⁰

Recording acts—which provide for public recording of interests in land and protect bona fide purchasers from some unrecorded encumbrances—represent yet another notice-facilitating mechanism. There was no recording system in England when the seminal nineteenth-century servitude cases were decided. There were, however, recording systems in every American state.⁴¹

In light of the notice provided by state recording systems, one might have expected the American courts to take a more accommodating and less convoluted approach to servitudes.⁴² To the contrary, they initially adopted the English categories and many of the corresponding doctrinal limitations.⁴³ They refused to enforce most negative easements, were hostile to easements in gross, and recognized real covenants only where the original parties were in horizontal privity.⁴⁴ But there were some differences. For example, U.S. courts adopted a more liberal definition of horizontal privity, which included grantor-grantee relationships in addition to landlord-tenant.⁴⁵ Because covenants entered into in the context of a land transfer would be publicly recorded in the deed, this expanded notion of privity made sense in the American context. But express easements could be recorded too, and later it became clear that covenants between independent landowners could be recorded as well.⁴⁶ And yet most of the English restrictions on these servitudes persisted in American states well into the twentieth century, making their way into the first *Restatement of Property* in 1944 and subsequent case law despite fierce opposition by those who saw the restrictions as anachronistic solutions to a notice problem that no longer existed in the United States, if it ever did.⁴⁷

Criticism of the law’s complexity and needless hostility to certain types of

40. Regarding post-*Tulk* expansion and contraction of equitable servitude doctrine, see SIMPSON, *supra* note 20, at 259–60.

41. DUKEMINIER ET AL., *supra* note 28, at 737.

42. *See id.* at 738.

43. *Id.*

44. Cf. JOHN P. DWYER & PETER S. MENELL, PROPERTY LAW AND POLICY: A COMPARATIVE INSTITUTIONAL PERSPECTIVE 758 (1998) (“The derivation of the horizontal privity requirement is one of the great doctrinal wrong turns of American property law.”).

45. Massachusetts adopted an intermediate position. *See French*, *supra* note 18, at 1293–94.

46. *See Reichman*, *supra* note 19, at 1219–21.

47. Regarding horizontal privity, see CLARK, *supra* note 30, at 117; Lawrence Berger, *A Policy Analysis of Promises Respecting the Use of Land*, 55 MINN. L. REV. 167, 193–95 (1970). On the persistence of limitations in U.S. servitude law “notwithstanding persistent criticism from the academic community,” see Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 16–17.

servitudes persisted, and over the course of the twentieth century courts in the United States gradually relaxed some of the most controversial limitations. Most jurisdictions no longer require horizontal privity; most enforce easements in gross and allow them to be assigned.⁴⁸ A few new types of negative easements have been recognized (and the functional equivalent of a negative easement is easily accomplished in the guise of a real covenant or equitable servitude). Some courts have relaxed the touch and concern requirement.⁴⁹

This evolution is reflected in the recent *Restatement (Third) of Property: Servitudes*, which abandons the horizontal privity requirement, “touch and concern,” and all limitations on benefits held in gross.⁵⁰ *Restatement* Reporter Susan French explained in advance of the project that alternative mechanisms for providing notice justified eliminating unnecessary rules: “Servitudes law may be simplified substantially because particular rules designed to give notice are no longer needed. The modern technology of record systems and title search procedures, together with the protection recording acts afford, have made these rules superfluous.”⁵¹

This evolution of servitude law informs contemporary theories about how information costs influence the structure of property rights (and vice versa). In an influential article, Thomas Merrill and Henry Smith observe that “the law will enforce as property only those interests that conform to a limited number of standard forms.”⁵² In civil law countries, this standardization of property forms is explicitly recognized and referred to as the “*numerus clausus*” principle.⁵³ Merrill and Smith argue that it operates consistently in common law systems as well. Only certain types of property interests are recognized by law, they argue, because infinite variety would raise the information costs associated with every property transaction (or potentially infringing activity).⁵⁴ As they explain: “The existence of unusual property rights increases the cost of processing information

48. See JON W. BRUCE & JAMES W. ELY, JR., *THE LAW OF EASEMENTS AND LICENSES IN LAND* § 9:4 (2001).

49. See RICHARD R. POWELL, *POWELL ON REAL PROPERTY* § 60.04 (2005); Sterk, *supra* note 1, at 649 n.141 (noting paucity of case law invalidating servitudes for failure to satisfy the touch and concern requirement).

50. *RESTATEMENT (THIRD) OF PROP.: SERVITUDES* §§ 2.4, 2.6, 3.2 and introductory notes to chs. 2 & 3 (2000).

51. French, *supra* note 19, at 1225; see also Epstein, *supra* note 1, at 1358 (arguing that “with notice secured by recordation, freedom of contract should control”); Hansmann & Kraakman, *supra* note 34, at S407 (explaining that “registries developed for verifying ownership of land” avoid “many of the additional system and nonuser costs that effective verification of these rights would otherwise require”); Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 40 (noting that “recording acts . . . lower[] the costs of notice [and are] an alternative method of lowering information costs”). On recording acts generally, see POWELL, *supra* note 49, § 82.01. On marketable title acts, see *id.* § 82.04.

52. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 3.

53. *Id.* at 4.

54. Unlike some defenders of the common law restrictions on servitudes, Merrill and Smith worry less about notice to buyers of idiosyncratically configured property than about third parties for whom property transactions become more complicated due to the existence of new and idiosyncratic property forms. *Id.* at 31–35.

about all property rights. Those creating or transferring idiosyncratic property rights cannot always be expected to take these increases in measurement costs fully into account, making them a true externality.”⁵⁵ Merrill and Smith go on to observe that the traditional rules limiting servitudes—and other doctrines that limit idiosyncratic property rights—keep these information costs in check. They point to the touch and concern requirement as an example of a doctrinal technique that standardizes servitudes and thus limits the information costs they impose.⁵⁶

Other scholars have pointed out that standardization is only one of many ways in which the law might address problems of notice and information costs.⁵⁷ As noted above, the evolution of servitude law itself illustrates various approaches. *Keppell v. Bailey*, on which Merrill and Smith rely, illustrates the standardization solution—limiting the types of servitudes that will be enforced and thus avoiding the confusion that “incidents of a novel kind” might cause if they could be “devised and attached to land at the fancy and caprice of the owner.”⁵⁸ *Tulk* illustrates an alternative approach, enforcing a wider variety of property arrangements upon a direct showing of notice. The recent *Restatement* relies on the more systematic notice provided by the recording system and consequently abandons many of the doctrines that standardized servitudes by limiting their form and subject matter. Indeed, although Merrill and Smith develop a theory of property standardization as a solution to information cost problems, they acknowledge these alternative solutions and even predict the type of legal evolution that we have seen in servitude law:

As the costs of standardization to the parties and the government shift, we expect the optimal degree of standardization to rise or fall. Consider the rise of registers of interests in real property, that is, recording acts. This device lowers the costs of notice; it is an alternative method of lowering information costs.⁵⁹

3. Notice Versus Salience

Even where land records provide express notice of servitude obligations, the party to be bound may not take full account of the servitude when acquiring the

55. *Id.* at 8.

56. *See id.* at 17 (listing the touch and concern requirement as an example of the operation of the *numerus clausus* principle in the context of nonpossessory property rights).

57. *See, e.g.,* Hansmann & Kraakman, *supra* note 34, at S382 (observing that “property law generally does not place absolute limits on the types of property rights that can be created, but rather regulates the forms of notice that must be given of those rights”); Robinson, *supra* note 4, at 1486–87 (arguing that “[w]hat [Merrill and Smith] overlook is the fact that if every buyer must be given specific notice of any deviation from the baseline of full title transfer, the information cost problem is solved A legally required notice has the same effect of internalizing information costs as a legal guarantee of formal title under a *numerus clausus* principle”).

58. *Keppell v. Bailey*, (1834) 39 Eng. Rep. 1042, 1049 (Ch.).

59. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 40.

burdened parcel. Psychological research into the decision-making process suggests that buyers conserve effort by focusing their attention on a limited number of salient product features.⁶⁰ Based on this research, Russell Korobkin concludes that “[n]otice” is a prerequisite of salience, but notice is not a sufficient condition of salience.”⁶¹ A buyer might not accurately account for a use restriction if it is not one of the salient factors on which she focuses her decision-making. The problem of lack of salience can be particularly acute in the servitude context because of the way in which a servitude attaches to an interest in land, thus “bundling” potentially nonsalient terms with the overwhelmingly salient right to possess a desired parcel.⁶² As Mark Kelman puts it, “subsequent purchasers may not adequately reevaluate the large bundle (say, a home in a particular location) based on a small feature (a mildly annoying covenant).”⁶³ Bundling seems especially likely to exacerbate notice and comprehension problems where it is combined with other obstacles to effective comparison shopping—such as when the land upon which the restriction is imposed is unique and therefore not subject to full competition with regard to the terms with which it is bundled, or where the servitude restriction is ubiquitous in a given area. Commentators have noted that both of these characteristics arise frequently in residential real estate markets,⁶⁴ spawning a literature and legal reform movement regarding the governance of common interest communities.⁶⁵ The details of that movement are beyond the scope of this paper, but the characteristics of the servitudes that raise these concerns will inform the analysis to come.

In sum, concerns about notice and information costs originally helped to justify limitations on land servitudes in English common law courts. But the recognition that recording systems alleviate some of those concerns has led to the abandonment or modification of some of the longstanding limitations, at least in the United States. Concerns about the effectiveness of notice still contribute to servitude skepticism, however, where issues of bundling, ubiquity,

60. See Russell Korobkin, *Bounded Rationality, Standard Form Contracts, and Unconscionability*, 70 U. CHI. L. REV. 1203, 1229–30 (2003).

61. *Id.* at 1234.

62. See Gregory S. Alexander, *Freedom, Coercion, and the Law of Servitudes*, 73 CORNELL L. REV. 883, 894 (1988). But see Richard A. Epstein, *Covenants and Constitutions*, 73 CORNELL L. REV. 906, 912 (1988); Stewart E. Sterk, *Minority Protection in Residential Private Governments*, 77 B.U. L. REV. 273, 303 (1997).

The commentary to the new Restatement acknowledges that truly effective notice can be elusive in this context: “Buyers of residential property, particularly first-time buyers in common-interest communities, tend to focus on price, location, schools, and physical characteristics of the property, rather than on the details of the documents that impose servitudes on the property and create the governing association.” RESTATEMENT (THIRD) PROP.: SERVITUDES ch. 6, introductory note (2000).

63. MARK KELMAN, A GUIDE TO CRITICAL LEGAL STUDIES 108–09 (1987).

64. E.g., Lee Anne Fennell, *Contracting Communities*, 2004 U. ILL. L. REV. 829, 849, 858; Winokur, *supra* note 20, at 57–59; see also Epstein, *supra* note 62, at 917.

65. See generally Susan F. French, *Making Common Interest Communities Work: The Next Step*, 37 URB. LAW. 359 (2005).

and lack of effective competition limit the degree to which the parties bound by servitudes can be expected to make reasoned decisions about their desirability.

C. THE PROBLEM OF THE FUTURE

Assuring adequate and meaningful notice and minimizing information costs are not the only justifications for standardizing property rights and restricting servitudes. There is another constellation of concerns for which I will borrow Julia Mahoney's useful term: "the problem of the future."⁶⁶ Within this constellation I include a number of related issues regarding the extent to which enforcement of servitudes undesirably limits the freedom of future generations to manage resources wisely and autonomously.⁶⁷ The theme is excessive control by one generation over the freedom and flexibility of the next. The specific concerns are that excessive control will limit autonomy and recreate feudal incidents, impose inefficient land-use choices, and threaten freedom of alienation. These problems arise not only from manipulation of property rights by an earlier generation but also from the transaction costs that make that manipulation difficult to undo.

Mahoney raises the problem of the future specifically in the context of perpetual conservation easements—a special type of negative easement in gross that has been given statutory recognition (in contravention of the common law limitations on negative easements) in every U.S. state. A typical conservation easement might provide that the covered land "shall be used only for conservation and for noncommercial outdoor recreation by the general public" and that "[n]o industrial, mining, or commercial activities, and no residential or other building development are permitted."⁶⁸ Mahoney observes:

Conservation easements . . . impose significant potential costs on future generations by deliberately making non-development decisions hard to change. This means that future generations either will be stuck with their forbearers' land preservation choices, which will almost certainly fail to reflect contemporary cultural values and advances in ecological science, or will have to expend resources to extinguish (or at the very least renegotiate or have declared invalid) the conservation servitudes that constrict their options.⁶⁹

66. Mahoney, *supra* note 5; see also Susan F. French, *Perpetual Trusts, Conservation Servitudes, and the Problem of the Future*, 27 CARDOZO L. REV. 2523 (2006); cf. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 4–7 (surveying the literature and observing that "[t]he primary candidate for an economic expression [of the numerus clausus principle] has been the suggestion that the numerus clausus is a device for minimizing the effects of durable property interests on those dealing with assets in the future").

67. See generally MARGARET JANE RADIN, *REINTERPRETING PROPERTY* 112–19 (1993) (discussing ways in which restraints on alienation and servitudes may "enhance[] or inhibit[] freedom or personhood systematically over time").

68. ELIZABETH BYERS & KARIN MARCHETTI PONTE, *THE CONSERVATION EASEMENT HANDBOOK* 322 (2d ed. 2005).

69. Mahoney, *supra* note 5, at 744. Mahoney arguably overstates the danger posed by obsolete conservation easements, given that there are now various mechanisms for terminating obsolete servi-

One feature of servitudes that contributes to these concerns about the future is the aforementioned remoteness between burdened and benefited parties who may be complete strangers—a remoteness that can contribute to the difficulty of renegotiating an obsolete servitude. Another important servitude feature that underlies the problem of the future is durability.⁷⁰ Unlike a living party to a contract, a parcel of land that carries its terms with it can interact with generations of people over time—increasing the likelihood that unforeseen circumstances will render it obsolete.⁷¹ The problem of the future is further compounded when a servitude arises in a context of rapid and unpredictable change, making unforeseen obsolescence especially likely.⁷²

1. Dead-Hand Control Versus Autonomy and Efficiency

Concern about the problems that servitudes pose for future generations resonates with the larger literature and jurisprudence about “dead-hand control.” A classic statement comes from Lewis Simes, who argued in his lectures on “Public Policy and the Dead Hand,” that “[i]t is socially desirable that the wealth of the world be controlled by its living members and not by the dead.”⁷³ Simes went on to quote Thomas Jefferson, who insisted in a letter to James Madison that “[t]he earth belongs always to the living generation. They may manage it then, and what proceeds from it, as they please during their usufruct.”⁷⁴

This preference for the living over the dead is often justified in terms of autonomy, and contrasted with feudal serfdom.⁷⁵ On this view, controlling

tudes. See generally Barton H. Thompson, Jr., *The Trouble with Time: Influencing the Conservation Choices of Future Generations*, 44 NAT. RESOURCES J. 601 (2004) (responding to Mahoney and detailing how conservation easements can be terminated, despite their “perpetual” nature). But the general concern with the problem of the future resonates throughout servitude jurisprudence (and, indeed, is the rationale for those termination mechanisms). See generally French, *supra* note 65 (describing perpetual trusts and conservation easements and the problems of the future associated with each).

70. See Rose, *supra* note 27, at 213.

71. See Stewart E. Sterk, *Foresight and the Law of Servitudes*, 73 CORNELL L. REV. 956 (1988); see also Robinson, *supra* note 4, at 1489 (observing that “[a] restriction on the use (or sale) of Blackacre can limit the use of a valuable resource for a very long time”).

72. Cf. Julia D. Mahoney, *The Illusion of Perpetuity and the Preservation of Privately Owned Lands*, 44 NAT. RESOURCES J. 573, 584 (2004) (arguing that in the environmental context, “[e]nhanced understanding of ecological processes, along with technological developments, evolving cultural values, and physical changes in the natural world itself, will compel later generations to revisit many of the preservation choices made today”). But cf. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 30–31 (“[L]imited foresight might prevent A or B from making a completely accurate forecast of the costs to those who deal with the asset in the future. This does not, however, furnish a basis for taking the decision out of the hands of the original transactors, unless officials are in a better position to estimate these costs than are the originating parties, who are closest to the transaction and who face the costs most directly. Generally speaking, this is not likely.”).

73. LEWIS M. SIMES, PUBLIC POLICY AND THE DEAD HAND 59 (1955).

74. *Id.* (quoting Letter from Thomas Jefferson to James Madison (Sept. 6, 1789), in 5 THE WRITINGS OF THOMAS JEFFERSON 115 (Paul Leicester Ford ed., 1895)).

75. As Uriel Reichman puts it in his discussion of servitudes, “[p]rivate property is sanctioned by society not only to promote efficiency, but also to safeguard individual freedom. Servitudes are a kind

people who are distant in time and space—not family members or contractual privies—is a power associated with government (or with undesirable feudal hierarchy). Such control should not be unilaterally imposed by private parties merely on the basis of their property ownership and informed only by their “whim and caprice.”⁷⁶

The concern with dead-hand control is also often discussed in utilitarian terms: the land-use choices of previous generations may turn out to be inefficient ones in light of changed circumstances. Mahoney’s reference to “advances in ecological science,” for example, reflects a concern that servitudes that bind future landowners may compel ultimately undesirable land uses (or, more likely, forbid desirable ones).⁷⁷

2. Transaction Costs and the Dead Hand

Where voluntary termination of servitudes is allowed by law (as it typically, but not always, is)⁷⁸ the mechanism by which dead-hand control limits autonomy or efficiency requires further explanation. The potential problem is that transaction costs may block a negotiated solution—even where all affected parties would, in theory, agree to extinguish the unwanted servitude. The current holders of the servitude’s beneficial interest may be difficult to identify and locate, and they may be so numerous as to make contact and negotiation infeasible. Defenders of limitations on servitudes often point to this specter of transaction-cost-insulated servitudes as a justification for policies that either constrain the subject matter of servitudes or enable judges to terminate the detrimental ones on the basis of “changed circumstances.”⁷⁹

3. Fragmentation and Restraints on Alienation

Inefficient but transaction-cost-insulated servitudes represent a species of the anticommons problem described by Michael Heller with regard to fragmentation of property interests more generally.⁸⁰ Servitudes divide rights in a single

of private legislation affecting a line of future owners. Limiting such ‘legislative powers’ . . . eliminates the possibility of creating modern variations of feudal serfdom.” Reichman, *supra* note 19, at 1233. For a skeptical view, see Alexander, *supra* note 1, at 1258; Alexander, *supra* note 62, at 891–92.

76. *Copelan v. Acree Oil Co.*, 290 S.E.2d 94, 96 (Ga. 1982).

77. See Gerald Korngold, *Privately Held Conservation Servitudes: A Policy Analysis in the Context of in Gross Real Covenants and Easements*, 63 TEX. L. REV. 433, 457 (1984) (arguing that “[t]he market response of a future property owner to the future needs of society is likely to be more effective than a past owner’s fixed blueprint”).

78. In some states, statutes make it difficult to terminate a conservation easement even if the easement holder agrees. But usually conservation easements, like other types of servitudes, can be voluntarily extinguished by negotiation with the holder of the non-possessory interest. See generally BYERS & PONTE, *supra* note 68, at 195–96.

79. See, e.g., Reichman, *supra* note 19, at 1233; French, *supra* note 18, at 1314.

80. In an anticommons, according to Heller’s definition, “multiple owners are each endowed with the right to exclude others from a scarce resource, and no one has an effective privilege of use. When there are too many owners holding rights of exclusion, the resource is prone to underuse—a tragedy of the anticommons.” Heller, *supra* note 7, at 624.

parcel of land among multiple owners. If it is later desirable to consolidate those rights in order to put the resource to its best use, fragmentation of the property bundle (and the transaction costs involved in re-bundling) can make consolidation difficult. Heller cites restrictions on servitudes among “numerous restraints [that] limit an individual’s capacity to break up property bundles too much.”⁸¹ Note that the anticommons problem is especially severe when rights are divided not only between the burdened landowner and the beneficial servitude owner, but also between multiple landowners and multiple servitude owners. The prospect for this kind of fragmentation is related to servitude durability. Over time land can be sold and divided and the attached burdens and benefits thus further fragmented.

Heller’s concern with fragmentation offers an interesting way to think about the longstanding but under-theorized concern with restraints on alienation, which is also often cited as a rationale for limiting servitudes.⁸² Most servitudes do not directly restrain transfer.⁸³ They merely limit the rights that can be acquired from any single owner. So a subsequent user who wants to reassemble property rights into a useful bundle must tackle the transaction costs involved in multiple negotiations. Often the problem is not so much restraint on alienation as restraint on acquisition: every individual property stick can be sold; the difficulty is buying a bundle that is useful to own.

4. Doctrinal Solutions to the Problem of the Future

The various concerns that I have lumped under the label “the problem of the future” have supplied a rationale apart from notice for common law restrictions on servitudes. For example, the touch and concern requirement can be explained as a prohibition on servitudes that, because they serve no enduring purpose connected to land use, are especially likely to be undesirable to future generations.⁸⁴ As Uriel Reichman explains, “[O]bligations not related to actual property use are highly individualized. They tend, therefore, to become inefficient in the short run following a transfer. Consensual termination of such rights might not occur because of prohibitive transaction costs.”⁸⁵

Like Merrill and Smith, Reichman is especially concerned with idiosyncratic servitudes—here not because of information costs but instead because of the

81. *Id.* at 664; accord Mahoney, *supra* note 5, at 785; Frank I. Michelman, *Ethics, Economics, and the Law of Property*, in *ETHICS, ECONOMICS, AND THE LAW* 3, 15 (J. Roland Pennock & John W. Chapman eds., 1983).

82. On the role of restraints on alienation as a rationale for the law’s general tendency to standardize property rights, see Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 24. Merrill and Smith also note the connection to fragmentation, arguing that the theory that the *numerus clausus* is “a doctrine designed to prevent undue restraints on alienation . . . implicitly rests on concern about fragmentation.” *Id.* at 52.

83. Indeed, an effective restraint on transfer could eliminate the need to use a servitude as opposed to a bilateral contract.

84. Reichman, *supra* note 19, at 1233.

85. *Id.*

likelihood that an idiosyncratic servitude will become obsolete over time. The alarm sounded in *Keppell v. Bailey* seems apt here, directed as it is to servitudes that are “novel,” “peculiar,” and “attached to land at the fancy and caprice of the owner.”⁸⁶ Successors are unlikely to have similarly peculiar preferences, yet transaction costs may make it difficult for them to escape strange servitudes.

As with the problem of notice, however, multiple mechanisms could be employed to address the problem of the future. Reichman defends the way in which the touch and concern doctrine simply refuses to enforce unusual servitudes that have nothing to do with land use—whether or not they have in fact become obsolete.⁸⁷ But the view adopted by the current *Restatement* is that concerns with the future are best addressed in the future—by marketable title acts and by doctrines that allow judicial modification or termination of obsolete servitudes—instead of through doctrines that limit servitude subject matter *ex ante*. As with notice, the *Restatement* uses the availability of these alternative approaches to justify discarding the common law rules (like touch and concern) that addressed the problem of the future indirectly.⁸⁸

Although the mechanisms used to address the issue have shifted over time, it is clear that the problem of the future is a recurring justification for servitude skepticism. As with the problems of notice and information costs, we can trace the concern with the future to specific traits that characterize (at least some) servitudes. Here the especially relevant features are the remote relationship between the parties, the durability of the burdens, and fragmented ownership; the problem of the future is compounded when these features occur in a rapidly changing legal and natural environment.

D. EXTERNALITIES

Restrictions that run with land can impose significant and harmful externalities on third parties.⁸⁹ Both the problem of the future and the problem of notice can be understood—at least in part—as externality problems. Inadequate or costly information about the nature of property rights in a specific parcel of land can produce confusion about property rights more generally. When one landowner’s parcel is burdened by a strange and confusing covenant, the rest of the neighborhood’s residents may become concerned and confused about the nature of their own rights.⁹⁰ They bear an “information-cost externality,” to use Merrill and Smith’s terminology.⁹¹ Similarly, the costs imposed by servitudes that will burden future generations in unpredictable ways may not be accounted for in

86. (1834) 39 Eng. Rep. 1042, 1049 (Ch.).

87. Reichman, *supra* note 19, at 1232–33.

88. See RESTATEMENT (THIRD) OF PROP.: SERVITUDES ch. 3, introductory note (2000).

89. See, e.g., Sterk, *supra* note 1, at 617.

90. Cf. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 8 (“The existence of unusual property rights increases the cost of processing information about all property rights.”).

91. Merrill & Smith, *Property/Contract*, *supra* note 6, at 777.

today's land transactions.⁹²

There are additional categories of externalities that have generated servitude skepticism.⁹³ A servitude that prohibits land from being used in a way that subjects a neighboring business to competition, for example, may harm third-party competitors and consumers.⁹⁴ A racially-restrictive covenant may harm third-parties who suffer its discriminatory impact.⁹⁵ The third-party effects of servitudes are likely to be especially pronounced (compared, for example, to the third-party effects of bilateral contracts imposing similar restrictions) because of the features of remoteness, durability, and ubiquity. Servitudes can reach out over time and space in a way that tends in general to expand their impact and thus to intensify the externality problem.⁹⁶

The touch and concern requirement has sometimes seemed like a catch-all doctrinal hook used by courts to weed out servitudes that impose harmful externalities.⁹⁷ The new *Restatement* opts to address the harms more directly, by invalidating those servitudes that “violate public policy” because, for example, they are “arbitrary, spiteful, or capricious,” or “unreasonably burden a fundamental constitutional right,” or “impose an unreasonable restraint on trade or competition.”⁹⁸

As we will see, the externality problem is one that features prominently in the analysis of whether and how the law of servitudes (and its limiting doctrines) should be applied outside of the land context.

E. LESSONS FROM LAND SERVITUDES

The evolution of land servitudes—and judicial and academic treatment of them—reveals that concerns with notice, with the well-being of future generations, and with externalities more generally have animated doctrines that have traditionally limited the subject matter, enforceability, and duration of running restrictions on land use. These concerns also resonate with recent scholarship praising standardization and consolidation of property rights. I have identified several features of servitudes that trigger these concerns: the remote and indefinite relationship between the parties to be benefited and burdened; the

92. See, e.g., Sterk, *supra* note 1, at 620.

93. See *id.* at 617.

94. See, e.g., *id.* at 622; cf. *Norcross v. James*, 2 N.E. 946, 949 (Mass. 1885) (using the touch and concern doctrine to invalidate running covenant against competition), *overruled in part by* *Whitinsville Plaza, Inc. v. Kotseas*, 390 N.E.2d 243, 246–49 (Mass. 1979). See generally Susan F. French, *Can Covenants Not To Sue, Covenants Against Competition and Spite Covenants Run with Land? Comparing Results Under the Touch or Concern Doctrine and the Restatement Third, Property (Servitudes)*, 38 REAL PROP. PROB. & TR. J. 267, 280–90 (2003) (reviewing two cases concerning whether covenants against competition run with the land).

95. E.g., *Shelley v. Kraemer*, 334 U.S. 1, 20 (1948); see also Epstein, *supra* note 62, at 918; Sterk, *supra* note 1, at 621–22.

96. Contracts that happen to affect many third parties might trigger the same level of concern. Cf. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 57; Epstein, *supra* note 62, at 917.

97. See, e.g., Sterk, *supra* note 1, at 648.

98. RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 3.1 (2000).

durability of the restrictions imposed; the fragmentation of rights to control use of a single resource; the potential lack of salience to purchasers; the insulation from effective competition where servitudes are attached to land with unique qualities; and the ubiquity of servitude restrictions across entire communities. Some of these features characterize all servitudes; others make particular servitudes especially problematic.

Some of the doctrines limiting land servitudes have faded in importance—or been discarded altogether—in light of alternative ways to address the concerns that servitudes raise. Perhaps the most notable development along these lines is the increasing willingness of courts and commentators to rely on state land-recording systems instead of subject-matter limitations like the touch and concern doctrine to ensure that successors to servitude-burdened land have notice of the terms to which use of their land will be subject. Other doctrinal reforms have aimed to address the problems of obsolescence and externalities directly, instead of via the opaque doctrines that have been deployed in the past.

This doctrinal to-and-fro need not obscure the fundamental concerns that seem still to motivate servitude law, nor the potential relevance of servitude-like characteristics to our analysis of analogous controversies in other contexts—including the context of personal property, to which I now turn.

II. PERSONAL PROPERTY SERVITUDES

The gradual erosion of traditional limitations on land servitudes can be explained in part by the development of alternative methods for ensuring notice, by the adoption of ex post solutions to the problem of the future, and by the replacement of vague requirements like touch and concern with more focused doctrines addressing specific types of harmful externalities caused by certain types of servitudes. This evolution has informed a less prominent debate about the wisdom of applying the servitude mechanism to items of personal property, a debate which can in turn inform current thinking about the new servitudes on software and other intangible works.

The conventional wisdom, as described by contemporary commentators, is that personal property servitudes are seldom enforceable. Merrill and Smith observe that “although the case law is rather thin, it . . . appears that one cannot create servitudes in personal property.”⁹⁹ Similarly, Henry Hansmann and Reinier Kraakman note that the law “makes it much simpler to establish partial rights in real property than in personal property.”¹⁰⁰ Tracing the origins and development of this special hostility to chattel servitudes reveals a different mix of the same concerns with notice, the problem of the future, and externalities that have animated the law of real servitudes.

99. Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 18.

100. Hansmann & Kraakman, *supra* note 34, at S407.

A. PERSONAL PROPERTY SERVITUDE SKEPTICISM

The ubiquity of land recording has motivated liberalization of servitude law in the United States. But this mechanism for providing notice of encumbrances on land is not generally available for other types of assets. There is no comprehensive recording system for personal property, a shortcoming that may help to explain the uncertain status of personal property servitudes.¹⁰¹

On the other hand, while there is no comprehensive system for record notice of chattel servitudes, actual notice is possible. Indeed, it is relatively easy for an item of personal property to travel with its terms attached directly to it via some sort of label.¹⁰² Thinking back to the development of servitude law as applied to land, the availability of this type of express notice might justify applying the logic of *Tulk* to personal property, enforcing running restrictions upon a finding of actual notice.¹⁰³

1. Early English Case Law

Indeed, English equity courts initially extended the equitable servitude reasoning of *Tulk* to personal property, holding in *De Mattos v. Gibson*¹⁰⁴ in 1858 that the principle applied “alike . . . to movable and immovable property.”¹⁰⁵ But after this initially welcoming reception, both English and U.S. courts equivocated.¹⁰⁶ Their increasing skepticism seems to have been aimed at the chattel servitude mechanism itself, although the arguably anti-competitive substance of the restrictions they considered makes the true target of their hostility somewhat ambiguous.

One widely cited English case, *Taddy & Co. v. Sterious & Co.*,¹⁰⁷ involved a tobacco manufacturer who tried to fix minimum retail prices for its products via notices (attached to catalogs, invoices, and boxes of tobacco) stating that the products were sold “upon the express condition that retail dealers do not sell the packet tobaccos or cigarettes below the prices above set forth,” and that “[a]cceptance of the goods will be deemed a contract between the purchaser and Taddy & Co. that he will observe these stipulations.”¹⁰⁸ The plaintiff sold some

101. See, e.g., *id.* (arguing that “[p]art of the reason [that it is so “much simpler to establish partial rights in real property than in personal property”] is that the registries developed for verifying ownership of land are available to record these other [partial] interests as well, hence avoiding many of the additional system and nonuser costs that effective verification of these rights would otherwise require”).

102. Regarding property rights established via labels, see *id.* at S390–93.

103. Cf. Robinson, *supra* note 4 (arguing in favor of general enforceability of personal property servitudes).

104. (1858) 45 Eng. Rep. 108 (Ch. App.).

105. *Id.* at 110; see also SIMPSON, *supra* note 20, at 259; Chafee, *Equitable Servitudes*, *supra* note 4, at 953–54; Andrew Tettenborn, *Covenants, Privity of Contract, and the Purchaser of Personal Property*, 41 CAMBRIDGE L.J. 58 (1982).

106. See, e.g., SIMPSON, *supra* note 20, at 259; Tettenborn, *supra* note 105, at 66.

107. [1904] 1 Ch. 354 (U.K.).

108. *Id.* at 355. The potentially anti-competitive impact of this type of restriction will be discussed *infra*.

of this tobacco to a wholesale dealer, who in turn sold it to the defendant Sterious & Co., who sold the tobacco to the public for less than the minimum price despite knowledge of the restrictive notices.¹⁰⁹ The plaintiff, relying on *De Mattos*, unsuccessfully sought a declaration that the restrictions were enforceable against the retailer. The court declared that “[c]onditions of this kind do not run with goods, and cannot be imposed upon them. Subsequent purchasers, therefore, do not take subject to any conditions which the Court can enforce.”¹¹⁰

Similarly, in *McGruther v. Pitcher*,¹¹¹ the court held that a manufacturer of heel pads for shoes could not enforce a minimum price that was printed inside the lid of each box of heel pads, even if the defendant retailer purchased the pads (from an intermediary) with notice of the condition. Lord Justice Vaughan Williams offered little reasoning, simply following *Taddy* after declaring the opinion “perfectly right.”¹¹² Lord Justice Romer elaborated with language that does not focus on the arguably anti-competitive substance of the challenged restriction (a complication to which I return below), but rather on the mechanism of attaching a restriction such that it “runs with” a good:

Can the plaintiffs succeed on the ground that they are selling goods, and that they purported to attach a condition to the resale of the goods, and that the defendant was informed of this condition when he purchased the goods? Clearly, to my mind, they cannot. A vendor cannot in that way enforce a condition on the sale of his goods out and out, and, by printing the so-called condition upon some part of the goods or on the case containing them, say that every subsequent purchaser of the goods is bound to comply with the condition, so that if he does not comply with the condition he can be sued by the original vendor. That is clearly wrong. You cannot in that way make conditions run with goods.¹¹³

2. Skepticism in U.S. Courts

Several early-twentieth-century cases in U.S. courts similarly refused to enforce running restrictions that attempted to fix prices, again often using language that seemed to condemn the chattel servitude mechanism itself (not simply the price fixing). *John D. Park & Sons v. Hartman*¹¹⁴ involved a manufacturer of unpatented medicine who attempted to fix retail prices by only selling to wholesalers who agreed to sell only to approved retailers who had agreed to the manufacturer’s minimum prices. The defendant, a retailer who was not on the manufacturer’s approved list, nonetheless managed to acquire a

109. *Id.*

110. *Id.* at 358. The court also rejected the argument that the notice created a contract between the plaintiff and the defendant: “Whatever may be the case as between Taddy & Co. and [the wholesaler], there is no contract between Taddy & Co. and Sterious & Co.” *Id.* at 359.

111. [1904] 2 Ch. 306 (A.C.) (U.K.).

112. *Id.* at 309.

113. *Id.* at 311.

114. 153 F. 24 (6th Cir. 1907).

supply of the medicine, which it sold for less than the minimum price despite knowledge of the minimum price regime. The manufacturer apparently cited *De Mattos* “to support the notion that a covenant may attach to chattels which pass by delivery from hand to hand and bring any one who buys with notice under the restrictions against a resale at less than a dictated price.”¹¹⁵ Judge (later Justice) Lurton rejected that proposition, instead citing contrary cases (including *Taddy & Co.*) and declaring sweepingly that:

It is . . . a general rule of the common law that a contract restricting the use or controlling subsales cannot be annexed to a chattel so as to follow the article and obligate the subpurchaser by operation of notice. A covenant which may be valid and run with land will not run with or attach to a mere chattel.¹¹⁶

In *Dr. Miles Medical Co. v. John D. Park & Sons*,¹¹⁷ the Supreme Court considered the enforceability of a similar price-fixing scheme, explaining that “[t]he basis of the argument appears to be that, as the manufacturer may make and sell, or not, as he chooses, he may affix conditions as to the use of the article or as to the prices at which purchasers may dispose of it.”¹¹⁸ Like its predecessors, the Court seemed to reject this contention as a general matter, holding that “[w]hatever right the manufacturer may have to project his control beyond his own sales must depend not upon an inherent power incident to production and original ownership, but upon agreement.”¹¹⁹ *Dr. Miles* went on to suggest that such an agreement would be illegal per se—a rule that was recently overruled by the Supreme Court in an opinion that did not comment on the separate notion that a limitation that might in theory be imposed by express bilateral agreement should not be imposed via the mechanism of a condition “affix[ed]” to an article.¹²⁰

The Second Circuit had come to a similar conclusion in *Bobbs-Merrill Co. v. Straus*,¹²¹ in which a book publisher attempted to enforce a restriction printed inside books, to wit: “The price of this book at retail is one dollar net. No dealer is licensed to sell it at a less price, and a sale at a less price will be treated as an

115. *Id.* at 40.

116. *Id.* at 39.

117. 220 U.S. 373 (1911), *overruled in part by* *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 127 S. Ct. 2705 (2007).

118. *Id.* at 404.

119. *Id.* at 405.

120. *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 127 S. Ct. 2705, 2710 (2007) (explaining that in *Dr. Miles* “the Court established the rule that it is *per se* illegal . . . for a manufacturer to agree with its distributor to set the minimum price the distributor can charge for the manufacturer’s goods” and holding that “*Dr. Miles* should be overruled and . . . vertical price restraints are to be judged by the rule of reason”).

121. *Bobbs-Merrill Co. v. Straus (Bobbs-Merrill I)*, 147 F. 15 (2d Cir. 1906), *aff’d*, 210 U.S. 339 (1908).

infringement of the copyright.”¹²² The court understood this as an “attempt of an owner of an ordinary chattel to impose by contract restrictions upon its use or sale binding upon third parties, and which, it is claimed, may operate as a sort of ambulatory covenant annexed to the chattel.”¹²³ The court rejected that attempt, albeit rather timidly in light of the conflicting case law it cited on the topic (including both *De Mattos* and *Taddy & Co.*).¹²⁴

3. The Intellectual Property Complication

Bobbs-Merrill introduces a new complication into the chattel servitude analysis: intellectual property law. The plaintiff in *Bobbs-Merrill* did not rely exclusively on the equitable servitude notion from *De Mattos*. It also argued that as the copyright holder it had an exclusive right to “vend” the copyrighted work embodied in its books. By distributing books subject to restrictive terms, it was granting purchasers only a conditional license to exercise that vending right; vending outside the terms of that license (that is, selling books for less than one dollar) therefore amounted to copyright infringement.¹²⁵ The Copyright Act, according to this logic, provides a mechanism for imposing running restrictions on chattels that the common law lacks. The Second Circuit rejected that argument, and the Supreme Court affirmed.¹²⁶

On this point, both *Bobbs-Merrill* opinions purport merely to interpret the language of the Copyright Act, concluding that the right to “vend” granted in the Act is exhausted as to a given copy of a copyrighted work once that copy is sold.¹²⁷ But this interpretation seems to have been motivated in part by the more general notion that chattels should not be burdened with running restrictions—especially running restrictions that limit the terms on which they can be resold.¹²⁸ For example, the Supreme Court’s opinion notes with apparent alarm:

What the complainant contends for embraces not only the right to sell the copies, but to *qualify the title of a future purchaser* by the reservation of the right to have the remedies of the statute against an infringer because of the printed notice of its purpose so to do unless the purchaser sells at a price fixed in the notice.¹²⁹

122. *Id.* at 17.

123. *Id.* at 24.

124. *Id.* at 25–28.

125. *Id.* at 17.

126. *Bobbs-Merrill Co. v. Straus (Bobbs-Merrill II)*, 210 U.S. 339, 351 (1908).

127. *See id.* at 350 (“It is not denied that one who has sold a copyrighted article, without restriction, has parted with all right to control the sale of it.”); *Bobbs-Merrill I*, 147 F. at 22 (“If the statutory owner desires after publication to control the lawfully published copies, such control can only be secured by means of positive contract or conditions . . .”).

128. *See, e.g., Bobbs-Merrill I*, 147 F. at 20 (citing *Garst v. Hall & Lyon Co.*, 61 N.E. 219, 220 (Mass. 1901)); *see also* Joseph P. Liu, *Owning Digital Copies: Copyright Law and the Incidents of Copy Ownership*, 42 WM. & MARY L. REV. 1245, 1248–49 (2001).

129. *Bobbs-Merrill II*, 210 U.S. at 351 (emphasis added).

The Court refused to interpret the Copyright Act to include such a right.¹³⁰ Although (unlike the Second Circuit) it did not cite *Taddy & Co.* or any other cases addressing chattel servitudes, the Court's narrow interpretation of the vending right reveals an undercurrent of hostility toward running restrictions on chattels.¹³¹ The statutory rights granted to copyright holders supersede that hostility to some extent: there are some things that the owner of a copyright-embodiment chattel is not permitted to do with it (for example, reproduce each of its pages) on account of the non-possessory intellectual property rights created by copyright. But *Bobbs-Merrill* (and, later, the statutory codification of the "first-sale" doctrine¹³²) articulates one limit on even a copyright holder's power to impose running restrictions on personal property.

The relationship between intellectual property and chattel servitudes has arisen in the patent context as well. Several Supreme Court cases decided in the late nineteenth century emphasized the rights of owners of chattels embodying patented inventions to use their property without restriction. For example, in *Adams v. Burke*,¹³³ the Court rejected a patent-holder's attempt to enforce a territorial restriction on a purchaser of patented coffin lids.¹³⁴ Plaintiff Adams's predecessor in interest had made a partial assignment of its patent rights to a Boston company, Lockhart & Seelye, limited to the territory in and immediately around Boston.¹³⁵ Lockhart & Seelye manufactured coffin lids within that territory and sold some of them to defendant Burke. Burke, an undertaker, used the coffin lids in the course of his business in Natick, Massachusetts—which was outside of the Boston territory and therefore within the territory covered by the patent rights that Adams had acquired from the original patentee. The Court held that the territorial restriction could not be enforced via a patent suit against the purchaser Burke, explaining:

[W]hen the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly.¹³⁶

In other words, the patent holder's power to limit use of a product embodying a patented invention was exhausted once the product was sold; he could not thereafter object that uses for certain purposes or in certain places, for example,

130. *See id.*

131. *See id.* *See generally* Robinson, *supra* note 4 (describing links between the first-sale doctrine and common law principles).

132. 17 U.S.C. § 109 (2000).

133. 84 U.S. 453 (1873).

134. *Id.* at 456–57.

135. *See id.* at 456. A geographically limited assignment was expressly authorized by the Patent Act. *See id.* at 457–58 (Bradley, J., dissenting).

136. *Id.* at 456 (majority opinion).

were not authorized.¹³⁷ *Adams* was followed by *Keeler v. Standard Folding-Bed Co.*,¹³⁸ which clarified that the purchaser of a lawfully made and sold patented article has the right not only to use it however and wherever he likes, but also to sell it without restriction.¹³⁹ The *Keeler* Court articulated the broad principle that “one who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place.”¹⁴⁰

Unlike the resale price restriction attempted in *Bobbs-Merrill*, however, the territorial restrictions considered in *Adams* and *Keeler* were not attached via label to the chattels themselves. They were included in the manufacturing licenses under which the goods were made, but they did not expressly apply to the subsequent purchasers of those goods.¹⁴¹ These cases were therefore narrowly distinguishable when the Court revisited the question of running restrictions on patented goods in *Henry v. A.B. Dick Co.*¹⁴² In *A.B. Dick*, the Court characterized *Adams* and *Keeler* as cases involving “unconditional sales” of patented machines.¹⁴³ It then went on to hold that a patent holder could use an express conditional license to impose a running restriction on a chattel embodying a patented invention; specifically, the Court enforced a restriction stamped on a mimeograph machine (of which the purchaser had notice¹⁴⁴) which said: “This machine is sold by the A.B. Dick Company, with the license restriction that it may be used only with the stencil, paper, ink, and other supplies made by A.B. Dick Company.”¹⁴⁵

Justice Lurton—who had rejected the notion of a use restriction “annexed to a chattel” in *Hartman*—explained that the patent law (unlike the common law of personal property¹⁴⁶ and unlike copyright) separates ownership of a chattel from the right to use that chattel, and that the right to use can be granted conditionally so as to allow use subject to running restrictions:

137. See, e.g., HOVENKAMP ET AL., IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW 33-19 (identifying *Adams* as the source of the “‘first sale’ or exhaustion doctrine”); see also *United States v. Univis Lens Co.*, 316 U.S. 241, 250-52 (1942); *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 456 (1940).

138. 157 U.S. 659 (1895).

139. *Id.* at 666.

140. *Id.*

141. The dissent in *Keeler* noted, however, that the purchaser had notice of the restriction. See *id.* at 672 (Brown, J., dissenting); see also *Mallinckrodt, Inc. v. Medipart, Inc. (Mallinckrodt I)*, No. 89 C 4524, 1990 WL 19535, at *4 (N.D. Ill. Feb. 16, 1990), *rev'd*, 976 F.2d 700 (Fed. Cir. 1990); William A. Birdwell, *Exhaustion of Rights and Patent Licensing Market Restrictions*, 60 J. PAT. OFF. SOC'Y 203, 208 (1978).

142. See 224 U.S. 1 (1912), *overruled by* *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 517 (1917).

143. *Id.* at 19 (relying heavily on *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544 (1873)); see also *Mallinckrodt, Inc. v. Medipart, Inc. (Mallinckrodt II)*, 976 F.2d 700, 708 (1992).

144. *A.B. Dick*, 224 U.S. at 12.

145. *Id.* at 26.

146. *Id.* at 39.

The property right to a patented machine may pass to a purchaser with no right of use, or with only the right to use in a specified way, or at a specified place, or for a specified purpose [I]f the right of use be confined by specific restriction, the use not permitted is necessarily reserved to the patentee. If that reserved control of use of the machine be violated, the patent is thereby invaded. This right to sever ownership and use is deducible from the nature of a patent monopoly and is recognized in the cases.¹⁴⁷

The opinion suggested that other restrictions—including the type of territorial restrictions at issue in *Adams* and *Keeler* and even resale price-fixing restrictions of the type rejected in *Dr. Miles* and *Bobbs-Merrill*—could be enforced via an express restriction imposed by a patent holder against a chattel owner with notice.¹⁴⁸ Indeed, Justice Lurton cited an English case, *Incandescent Gaslight Co. v. Cantelo*, which held that a patentee's restrictive terms were enforceable with notice and that “[i]t does not matter how unreasonable or how absurd the conditions are.”¹⁴⁹

But the distinction that Justice Lurton drew between common law chattel servitudes and running restrictions imposed via patent law on the use of chattels embodying patented inventions was short-lived. Just one year after *A.B. Dick*, the Court refused to enforce express retail price limitations printed on packaging for patented medicine in *Bauer v. O'Donnell*.¹⁵⁰ In his *Bauer* opinion, Justice Day read *Adams* and its progeny more broadly than Justice Lurton had,¹⁵¹ describing them as “that line of cases in which this court from the beginning has held that a patentee who has parted with a patented machine by passing title to a purchaser has placed the article beyond the limits of the monopoly secured by the patent act.”¹⁵² Read this broadly, the precedents invalidated even a restriction that was expressly printed on packages of patented medicine with the warning that “[a]ny sale in violation of this condition, or use when so sold, will constitute an infringement of our patent.”¹⁵³ The Court confirmed the *Bauer* result in *Straus v. Victor Talking Machine Co.*,¹⁵⁴ refusing to enforce price restrictions attached to patented record players. And in *Motion Picture Patents Co. v. Universal Film Manufacturing Co.*,¹⁵⁵ the Court expressly overruled *A.B. Dick*, refusing to enforce a tying restriction imposed via a

147. *Id.* at 24–25.

148. *See id.* at 26.

149. *Id.* at 40 (quoting *Incandescent Gas Light Co. v. Cantelo*, (1895) 12 R.P.D.T.M.C. 262, 264 (Q.B.) (U.K.)).

150. 229 U.S. 1, 17 (1913).

151. Note that Justice Lurton dissented (without opinion) in *Bauer*.

152. *Bauer*, 229 U.S. at 17.

153. *Id.* at 8.

154. 243 U.S. 490, 501 (1917) (concluding that the case fell “within the principles of” *Adams* and *Bauer*).

155. 243 U.S. 502 (1917).

label on a movie projector.¹⁵⁶

Although complicated by the arguably anti-competitive effects of the specific restrictions at issue, which I discuss below,¹⁵⁷ these cases—like *Hartman*, *Dr. Miles*, and *Bobbs-Merrill*—can be read broadly to reject the chattel servitude logic of *De Mattos* and to reflect a special skepticism about chattel servitudes that applies even when the chattel at issue embodies an intangible work subject to intellectual property protection and even when the chattel is labeled with an express restriction on its use or sale.¹⁵⁸ This skepticism seems to reflect a somewhat different mix of the concerns with notice and information costs, dead-hand control over the future, and externalities that motivated skepticism of land servitudes.

B. NOTICE AND INFORMATION COSTS

1. Information-Processing Obstacles and Costs

Hostility toward chattel servitudes is difficult to explain in terms of notice as that concept is typically understood. In most of the leading cases refusing to recognize chattel servitudes, the terms of the restrictions at issue were easily available to the purchaser of the burdened chattel—typically via a label on the chattel itself.¹⁵⁹ But, as noted above in the land context, express notice may not produce truly informed decision-making by subsequent acquirers of burdened assets. There are characteristics of chattels that seem likely to make this problem of lack of salience more severe than in the land context.

For one thing, personal property is typically less expensive than land. That means that potential purchasers are likely to be less willing to devote time and energy to locating and studying the restrictive terms that attach to chattels and therefore will be more likely to overlook or misunderstand restrictive but low-salience terms.¹⁶⁰ The reality of purchaser inattention and confusion was an issue in *Straus v. Victor Talking Machine Co.*, in which the Supreme Court refused to enforce a restriction printed on a plate attached to record players,

156. *Id.* at 518–19; see also *Mallinckrodt, Inc. v. Medipart, Inc. (Mallinckrodt I)*, No. 89 C 4524, 1990 WL 19535, at *5 (N.D. Ill. Feb. 16, 1990), *rev'd*, 976 F.2d 700 (Fed. Cir. 1990).

157. Under the Federal Circuit's contemporary interpretation of this line of cases, this factor is key. See *infra* notes 199–203 and accompanying text.

158. In his seminal 1928 article, *Equitable Servitudes on Chattels*, Zechariah Chafee interpreted these cases to establish that “the vital distinction is drawn when title to the article passes When the patented article is sold it appears to pass outside the scope of the patentee’s monopoly in every respect.” Chafee, *Equitable Servitudes*, *supra* note 4; see also Robinson, *supra* note 4, at 1466 (“These decisions might be distinguished as independent of the first-sale doctrine on the grounds that the restrictions were unlawful trade restraints. However, the Court made no such distinction and the decisions can be reasonably interpreted to hold that the first-sale doctrine was a fixed limitation, not simply a default rule.”).

159. See Robinson, *supra* note 4, at 1486 n.133; cf. Hansmann & Kraakman, *supra* note 34, at S416–17.

160. See generally Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 44–45 (discussing the costs of processing notice); Robinson, *supra* note 4, at 1486.

noting that “it must be recognized that not one purchaser in many would read such a notice, and that not one in a much greater number, if he did read it, could understand its involved and intricate phraseology.”¹⁶¹

Even if it were worthwhile to a purchaser to take the time and energy to understand and take account of a complicated restriction attached to a chattel, that investment might be socially undesirable. Chafee alluded to this possibility in *Equitable Servitudes on Chattels*: “Land remains in the same hands for comparatively long periods of time and is transferred after an elaborate investigation of the title, whereas chattels are ordinarily sold with rapidity, so that possible interferences with quick transfers are undesirable.”¹⁶² Chafee elaborated when he revisited the topic in 1956: “Where chattels are involved and not just land or a business, the policy in favor of mobility creates even stronger cause for courts to hesitate and scrutinize carefully factors of social desirability before imposing novel burdens on property in the hands of transferees.”¹⁶³

On this view, slowing down the process of transferring personal property by imposing restrictions that require time and effort to understand and account for is more problematic than clogging up land transfers. The difference is relative transaction costs: but for the complications caused by running restrictions, chattels would be liquid—flowing easily to their highest-value use. Refusal to enforce chattel servitudes avoids adding an extra level of informational complexity to what might otherwise be relatively simple and fluid commerce.¹⁶⁴ As the Supreme Court explained in *Dr. Miles*, “public policy . . . is best subserved by great freedom of traffic in such things as pass from hand to hand.”¹⁶⁵ This language could be read as a mere admonition against direct restraints on alienation—a familiar (but not determinative) concern about servitudes generally, as discussed above.¹⁶⁶ The more subtle point seems to be that non-possessory use restrictions make property transactions information-intensive and time-consuming, which is more troubling for chattels than for land: most transactions in chattels could otherwise be frequent, simple, and fast, due to the

161. 243 U.S. 490, 501 (1917).

162. Chafee, *Equitable Servitudes*, *supra* note 4 (raising but not endorsing this distinction).

163. Chafee, *Music*, *supra* note 4, at 1261.

164. *Cf.* Hansmann & Kraakman, *supra* note 34, at S384–85 (explaining that a “strict rule of possession,” which “would provide that the party with physical possession of an asset hold complete property rights in the asset and that physical transfer of the asset transfers all of those rights” is “reasonably close to the approach taken to most chattels” and that this system “is easy to understand, cheap to administer, and generally unambiguous”).

165. *Dr. Miles Medical Co. v. John D. Park & Sons*, 220 U.S. 373, 404 (1911), *overruled in part by* *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.* 127 S. Ct. 2705 (2007).

166. The Court was referring at least to direct restraints on alienation, but perhaps as a subset of a larger universe of restrictions that limit “freedom of traffic” in chattels. *See id.* (“[A] general restraint on alienation is ordinarily invalid.”). The rule against restraints on alienation does not alone get us very far in terms of explaining the special hostility to chattel servitudes. As Chafee pointed out, restraints on alienation of land are disfavored as well and yet equitable servitudes on land are generally enforceable (albeit traditionally subject to the various limitations described above). *See* Chafee, *Equitable Servitudes*, *supra* note 4, at 982; *see also* Robinson, *supra* note 4, at 1450.

inherent mobility and relative cheapness of chattels.

Buyers and sellers might not fully account for the harm that chattel servitudes do to what Chafee calls the “policy in favor of mobility.”¹⁶⁷ As Merrill and Smith point out, unusual property rights impose information costs on third parties.¹⁶⁸ If enforceable chattel servitudes exist, then every potential purchaser of personal property has to investigate (or risk being surprised by) the possibility of servitudes attached to her purchase.¹⁶⁹ This investigation may not be difficult, especially if express notice is a prerequisite for servitude enforcement.¹⁷⁰ But in the context of low-value transactions and possibly low-salience terms, the information costs involved may be significant enough to “clog the free and untrammelled circulation of personal property,”¹⁷¹ in a socially harmful way.

The information costs (and resultant clogging of transactions) imposed by chattel servitudes may not be different in kind from the costs that can be imposed by bilateral contracts (which are also often unread, misunderstood, and not fully contemplated).¹⁷² Indeed, some of the cases noted above involved plaintiffs who claimed that the notices they attached to their goods established contractual relationships with purchasers.¹⁷³ And, of course, contract law has its own doctrines designed to deal with lack of effective notice and assent.¹⁷⁴ But servitudes (including nominal “contracts” that behave like servitudes by running automatically to every possessor of an object to which their terms are attached) exacerbate and magnify what might otherwise be a problem of limited duration and scope. The fact that servitude terms are bundled with the transfer of possession of a physical object can cause special confusion because people are conditioned to associate possession with certain rights of use and transfer, and because the high salience of immediate possession is likely to swamp accompanying terms. Moreover, as discussed above, servitudes that reach through to subsequent possessors have the potential to affect more people, over a greater span of time, than bilateral contracts, thus multiplying the information-cost problems. As in the land context, the characteristics of bundling, remoteness, and durability exacerbate the information-cost problems that arise when a restriction is attached to a thing.

167. See Chafee, *Music*, *supra* note 4, at 1261.

168. See Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 26–27.

169. See *id.* at 26–34, 44–48.

170. Robinson argues that notice solves the problem, see Robinson, *supra* note 4, at 1486–87, but he does not fully account for the relative burden imposed by information costs in the personal property context.

171. See *Waring v. WDAS Broad. Station*, 194 A. 631, 637–38 (Pa. 1937) (raising this possibility but concluding that the restriction imposed in the case was justified by a legitimate and important purpose).

172. On the continuous spectrum between property and contract, see generally Hansmann & Kraakman, *supra* note 34; Merrill & Smith, *Property/Contract*, *supra* note 6.

173. See, e.g., *McGruther v. Pitcher*, [1904] 2 Ch. 306, 306–08 (U.K.) (action for breach of contract for violation of pricing terms printed on lid of packing box); *Taddy & Co. v. Sterious & Co.*, [1904] 1 Ch. 354, 355–57 (U.K.) (action for breach of contract for violation of pricing terms printed on invoices and packaging).

174. Including limits on contracts of adhesion, formation requirements, and the statute of frauds, among others.

2. Intellectual Property Rights and the Information-Cost Baseline

Note that the baseline information costs are somewhat different where the chattel at issue embodies a patented invention or copyrighted work. Intellectual property necessarily complicates the rights associated with some chattels. A buyer of a book lacks the right to use it in certain ways—for example, to photocopy its pages.¹⁷⁵ A buyer of a patented machine lacks the right to do certain things with the machine—for example, to reconstruct it.¹⁷⁶ A buyer who wants to be sure she can do whatever she wants with such a chattel must necessarily do some investigating of its copyright or patent status. The informational burden is limited, however, if the restrictions imposed by intellectual property are unlikely to constrain ordinary consumer behavior. This was largely the case when the key Supreme Court cases at the intersection of intellectual property and chattel servitudes (including *Adams v. Burke* and *Bobbs-Merrill*) were decided. Before the advent of inexpensive and user-friendly copying technology, for example, most of the things that consumers did with copies of copyrighted works did not implicate copyright law at all. A consumer could buy a book and read it without thinking twice.¹⁷⁷ Against this background, cases like *Bobbs-Merrill* (which suggested that book purchasers should also be permitted to transfer their books)¹⁷⁸ can be understood as part of an effort to maintain the informational simplicity of commerce in things that “pass from hand to hand,” even when those things are burdened with intellectual property rights.

In contrast to the chattel purchaser who wants merely to make an ordinary consumer use of, and perhaps to transfer, the thing she has acquired, consider a publisher or manufacturer who wants to do things that go to the heart of the intellectual property owner’s exclusive rights (for example, reproduce a book or manufacture a patented machine). The transaction required to pursue those purposes will necessarily be information-intensive. The intellectual property holder’s exclusive rights to do these things are neither neatly embodied in a physical object nor manifested by possession.¹⁷⁹ Even if they were, the protection afforded by patent and copyright would be meaningless if the transfer of a

175. See 17 U.S.C. § 106(1) (2000 & Supp. IV 2004) (copyright holder’s exclusive right to reproduce the copyrighted work).

176. See *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 342–43 (1961); *Wilson v. Simpson*, 50 U.S. (9 How.) 109, 112 (1850); Mark D. Janis, *A Tale of the Apocryphal Axe: Repair, Reconstruction, and the Implied License in Intellectual Property Law*, 58 MD. L. REV. 423, 428, 433 (1999).

177. Cf. Lawrence Lessig, *The Creative Commons*, 65 MONT. L. REV. 1, 6 (2004) (discussing the role of digital technology in expanding the scope of copyright protection to previously unregulated uses of creative works).

178. *Bobbs-Merrill Co. v. Straus (Bobbs-Merrill II)*, 210 U.S. 339, 350 (1908) (concluding that “the copyright statutes, while protecting the owner of the copyright in his right to multiply and sell his production, do not create the right to impose, by notice, . . . a limitation at which the book shall be sold at retail by future purchasers”).

179. Cf. Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 483 (2004) (observing that “[i]nformation costs are more significant in intellectual property than in real property and personal property law. Because they are intangible, determining and measuring the boundaries of intellectual goods are more difficult than determining measuring the boundaries of real property”);

chattel embodying the protected work were understood to transfer all rights to it. Instead, a would-be publisher of a copyrighted book or manufacturer of a patented machine needs to acquire a license that gives it permission to exercise the intangible rights of reproduction or manufacture that are otherwise reserved to the intellectual property holder. Perhaps in light of the necessarily complex and information-intensive nature of this transaction, courts have long allowed intellectual property holders to impose idiosyncratic conditions on the exercise of these intangible rights. For example, courts have enforced a wide variety of territorial and field-of-use restrictions against both licensees and sub-licensees of reproduction and manufacturing rights even while refusing to enforce similar restrictions against subsequent purchasers of lawfully made chattels, per *Adams v. Burke* and *Bobbs-Merrill*.¹⁸⁰

The Supreme Court articulated this distinction between chattel servitudes and intellectual property license restrictions in *United States v. General Electric Co.*,¹⁸¹ where it explained:

It is well settled . . . that where a patentee makes the patented article, and sells it, he can exercise no future control over what the purchaser may wish to do with the article after his purchase. It has passed beyond the scope of the patentee's rights . . .

But the question is a different one which arises when we consider what a patentee who grants a license to one to make and vend the patented article may do in limiting the licensee in the exercise of the right to sell. The patentee may make and grant a license to another to make and use the patented articles but withhold his right to sell them. The licensee in such a case acquires an interest in the articles made. He owns the material of them and may use them. But if he sells them he infringes the right of the patentee, and may be held for damages and enjoined. If the patentee goes further and licenses the selling of the articles, may he limit the selling by limiting the method of sale and the price? We think he may do so provided the conditions of sale are normally and reasonably adapted to secure pecuniary reward to the patentee's monopoly.¹⁸²

The *General Electric* Court was willing to enforce even a maximum-price restriction against a manufacturing licensee, explaining that prior court decisions, such as *Bobbs-Merrill* and *Bauer*, rejecting price-fixing restrictions

are only instances of the application of the principle of *Adams v. Burks* [sic] . . . that a patentee may not attach to the article made by him or with his

Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1799-1819 (2007) (discussing information costs in patent and copyright law).

180. See HOVENKAMP ET AL., *supra* note 137, at 33-17 & n.1 (citing cases including enforcement against sub-licensees); see also 35 U.S.C. § 261 (2000) (including authorization for territorially-restricted grants of patent rights). Regarding field-of-use restrictions, see HOVENKAMP ET AL., *supra* note 137, at 33-27.

181. 272 U.S. 476 (1926).

182. *Id.* at 489-90.

consent a condition running with the article in the hands of purchasers limiting the price at which one who becomes its owner for full consideration shall part with it. They do not consider or condemn a restriction put by a patentee upon his licensee as to the prices at which the latter shall sell articles which he makes and only can make legally under the license.¹⁸³

Given the price-restrictive substance of the restriction enforced in *General Electric*, it is difficult to distinguish the restriction from those in cases like *Dr. Miles*, *Bobbs-Merrill*, and *Motion Picture Patents* on the ground that it did not impose anti-competitive externalities.¹⁸⁴ Instead, the quoted language referring to articles which the licensee “makes and only can make legally under the license” seems to allude to the information-cost-based distinction between chattel purchasers and manufacturing licensees. A manufacturer who produces patented articles can reasonably be expected to pay attention to the terms of his manufacturing license, considering that the essence of the license is the permission it grants the licensee to do that which would otherwise be forbidden by the Patent Act. A purchaser of a patented chattel, by contrast, might reasonably focus on the tangible object she is acquiring and be inattentive to restrictions on her subsequent use and sale of that thing.

Case law in the early twentieth century seemed largely to track this distinction, enforcing (as in *General Electric*) restrictive terms embodied in licenses (and sublicenses) that permitted licensees to exercise intellectual property holders’ intangible rights to reproduce and manufacture, but refusing (as in *Dr. Miles*, *Adams v. Burke*, *Bobbs-Merrill*, and *Motion Picture Patents*) to enforce restrictions burdening chattel owners’ basic rights to use and transfer their personal property.¹⁸⁵

The relatively clear distinction between restrictions on manufacturing licensees and restrictions that run with patented goods to subsequent purchasers was muddled somewhat in *General Talking Pictures Corp. v. Western Electric Co.*¹⁸⁶ The case involved patents on vacuum tube amplifiers that were used in both motion picture equipment and radio receivers. American Transformer Company had acquired a license to manufacture and sell the amplifiers for purposes of radio use only, but it nonetheless sold amplifiers to the General Talking Pictures Corp. to use in motion picture equipment (albeit with notices attached to the amplifiers stating that they were licensed only for radio reception).¹⁸⁷ Patent

183. *Id.* at 493–94.

184. *Cf.* Birdwell, *supra* note 141, at 213–14 (noting that the antitrust explanation for cases in which price restrictions were held unenforceable “would not be consistent with the Supreme Court’s refusal so far to prohibit non-post-sale price restrictions on patented goods”).

185. *See e.g.*, Chafee, *Equitable Servitudes*, *supra* note 4, at 1002 (noting that cases upholding both use- and price-restrictions involved manufacturing licenses); Richard H. Stern, *The Unobserved Demise of the Exhaustion Doctrine in U.S. Patent Law*, 15 EUR. INTELL. PROP. REV. 460, 462–63 (1993) (noting that courts have generally not upheld post-sale restrictions on customers buying patented products).

186. 304 U.S. 175, *amended by* 304 U.S. 546, *aff’d on reh’g*, 305 U.S. 124 (1938).

187. *See id.* at 179–80.

owner AT&T (along with its subsidiaries and exclusive licensees) sued General Talking Pictures for patent infringement. General Talking Pictures pointed to *Adams's* exhaustion theory, arguing that “[t]he owner of a patent cannot, by means of the patent, restrict the use made of a device manufactured under the patent after the device has passed into the hands of a purchaser in the ordinary channels of trade and full consideration paid therefor.”¹⁸⁸

The Court rejected the exhaustion argument. It pointed out that the initial sale of the amplifiers to the defendant (unlike the initial sale of the coffin lids in *Adams*) was not lawful because the licensee knew that the amplifiers would be used in movie theaters:

The patent owner did not sell to [General Talking Pictures] the amplifiers in question or authorize the Transformer Company to sell them or any amplifiers for use in theaters The sales made by the Transformer Company to petitioner were outside the scope of its license and not under the patent.¹⁸⁹

If, as I have suggested, hostility toward chattel servitudes (both in the common law and as manifested in the copyright first-sale and patent exhaustion doctrines) is due in part to anxiety about the information costs imposed on the purchasers of burdened chattels, *General Talking Pictures's* willingness to enforce a restriction against the purchaser of a chattel on the basis of the misdeed of the intermediate licensee is difficult to explain. But *General Talking Pictures* can also be understood as a special instance in which the chattel purchaser could not plausibly claim that it (or any other purchaser similarly situated) could have been confused by, inattentive to, or otherwise cognitively burdened by the existence of a running restriction on its ability to use its personal property. The Court heavily stressed not just the express nature of the restriction attached via label to the amplifiers, but also the purchaser's actual knowledge of the restriction and plan to violate it at the time of the purchase:

Petitioner admits that the Transformer Company knew that the amplifiers it sold to petitioner were to be used in the motion picture industry. The petitioner, when purchasing from the Transformer Company for that use, had actual knowledge that the latter had no license to make such a sale

. . . .

The Transformer Company could not convey to petitioner what *both* knew it was not authorized to sell Petitioner, having with knowledge of the facts bought at sales constituting infringement, did itself infringe the patents embodied in the amplifiers when it leased them for use as talking picture equipment in theaters.¹⁹⁰

In light of this actual knowledge of the restriction and plan to violate it, the

188. *Id.* at 180.

189. *Id.*

190. *Id.* at 182 (emphasis added).

Court distinguished those cases championing the unrestricted movement of chattels, stressing that “[t]here is no ground for the assumption that petitioner was a ‘purchaser in the ordinary channels of trade.’”¹⁹¹ The Court explicitly based this conclusion on the purchaser’s actual knowledge of the restriction and plan to violate it, and not on the “license notice” attached to the amplifiers.¹⁹²

General Talking Pictures thus does not undermine the notion that express labels do not alone eliminate the information costs associated with restrictive terms imposed on tangible assets—information costs that loom relatively large in the chattel servitude context because the assets are otherwise simple, inexpensive, and mobile.

C. THE PROBLEM OF THE FUTURE

At first glance, the problem of the future seems less serious for chattels than for land. Restrictions that run with land can endure for generations, imposing obsolete choices and interacting with unforeseeable environmental changes. Chattels, by contrast, often wear out before their owners do. The restrictions imposed upon them may therefore become irrelevant long before they become obsolete.¹⁹³ But the information-cost problems just described can accelerate the problem of the future. Where it may take generations for a land servitude to become inefficiently obsolete, a chattel servitude can be inefficient on arrival or soon thereafter. The information costs and cognitive limitations discussed above make it especially likely that the purchaser of a chattel (especially an inexpensive chattel purchased quickly) will fail to foresee how seemingly harmless burdens on the chattel may be (or quickly become) undesirable both to the purchaser and to potential successors—especially where those burdens are bundled with salient, desirable, and unique product features. Thus the purchaser of an inexpensive laser printer may not fully contemplate how burdensome it will be to respect a requirement that the printer only be used with non-recycled ink cartridges, nor how undesirable that restriction may make the printer if recycling technology improves, nor how environmentally harmful it will be to use new instead of recycled cartridges.¹⁹⁴ The likely result if chattel servitudes are enforced is underused chattels—purchased carelessly and then discarded as unwanted and unmarketable once their limitations are fully realized.

D. EXTERNALITIES

Third-party harms play an especially important role in chattel servitude jurisprudence. All of the servitude-skeptical cases described above involved restrictions aimed either at fixing minimum prices, leveraging market power

191. *See id.* at 181.

192. *See id.* at 180, 182.

193. *See Robinson, supra* note 4, at 1489.

194. Such a restriction was considered in *Arizona Cartridge Remanufacturers Ass’n v. Lexmark International, Inc.*, 421 F.3d 981, 983–84 (9th Cir. 2005).

from one market to another through tying the use of specific products to the burdened chattel, or dividing a market by territory—that is, restrictions with potentially anti-competitive effects that could harm third-party market participants. Indeed, several of these are considered seminal cases in the early development of antitrust law (and the related doctrine of patent misuse).

Without more, the problem of anti-competitive effects does not distinguish servitudes from bilateral contracts—which can also impose third party harms and which are also subject to limitations designed to safeguard competition. But there is something more. The servitude mechanism amplifies the effect of a price-, tying-, or territorial-restriction—increasing the restriction’s duration and its scope. For example, a price restriction imposed via a traditional two-party contract between a manufacturer and a buyer will naturally be limited in its competition-restraining effect because it only lasts for one generation of sellers and sales. By reaching through to subsequent purchasers, the same restriction imposed via a chattel servitude will limit price competition by more sellers for a longer period. This anticompetitive effect is especially powerful when a manufacturer imposes the same restrictive terms on every item of a given type¹⁹⁵—even more so where the manufacturer does not face competition from sellers of similar products, making the restriction ubiquitous in the market for the good.¹⁹⁶

The predominance of competition concerns in the leading English and U.S. cases condemning chattel servitudes¹⁹⁷ has led several commentators to suggest that the general hostility toward chattel servitudes could be replaced with particularized antitrust scrutiny (especially now that antitrust law is more doctrinally mature than it was when these cases were decided).¹⁹⁸ These arguments echo those made in the land servitude context, urging liberalization of servitude law once the principal motivation for many of the traditional limits (notice) had been addressed through land recording systems.

The view that the cases skeptical of chattel servitudes were motivated by antitrust concerns, and thus have no application where the running restrictions are not anti-competitive, gains support from a handful of state and federal cases

195. See, e.g., *John D. Park & Sons v. Hartman*, 153 F. 2d, 42–43 (6th Cir. 1907).

196. This market power was once assumed to exist where one tied good is patented, but no longer. See *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 31 (2006).

197. See Chafee, *Equitable Servitudes*, *supra* note 4, at 956 (noting that “[i]n several important decisions in this country, relief was denied because the particular restrictions involved were held invalid for restraint of trade”). Chafee also observes that “while the English cases decisively reject price restrictions on ordinary goods, they supply no adequate reason for refusing to extend equitable servitudes on land to chattels.” *Id.* at 980; see also Hansmann & Kraakman, *supra* note 34, at §417 (explaining that the refusal of U.S. courts to uphold equitable servitudes on chattels was “motivated by consideration of competition policy”); Robinson, *supra* note 4, at 1455 (observing that “[t]he status of personal property servitudes today is confused by the fact that most attempts to create post-sale restrictions on the use or transfer of property involve intellectual property and either are controlled by the specialized rules of patent or copyright or involve the type of restrictions that are barred by antitrust law”).

198. See, e.g., Robinson, *supra* note 4, at 1494–1515.

enforcing chattel servitudes,¹⁹⁹ and from the Federal Circuit's 1992 decision in *Mallinckrodt, Inc. v. Medipart*.²⁰⁰ In *Mallinckrodt*, the Federal Circuit characterized *Bauer, Straus*, and *Motion Picture Patents* as “establish[ing] that price-fixing and tying restrictions accompanying the sale of patented goods were *per se* illegal. These cases did not hold, and it did not follow, that all restrictions accompanying the sale of patented goods were deemed illegal.”²⁰¹ The court, therefore, refused to interpret those cases as necessarily invalidating a use restriction that neither fixed prices nor tied multiple products but rather limited a patented medical device to “single use only.”²⁰² The court suggested that the condition might amount to an antitrust violation or patent misuse (and remanded for further consideration of that question under the rule of reason), but if not, the condition was enforceable against a purchaser with notice (through a suit for patent infringement).²⁰³

What the court in *Mallinckrodt* failed to acknowledge is that, just as land recording does not solve every problem associated with land servitudes, safeguarding competition through antitrust (and patent misuse) does not eliminate every problem associated with chattel servitudes.²⁰⁴ Problems with notice and information costs, and with unjustified but inescapable burdens on future activity, can loom even larger in the context of chattel servitudes than they do in the land context in which they originally arose. The Supreme Court has been attentive to these problems in the past. It is currently considering them again in the context of *Quanta Computer, Inc. v. LG Electronics, Inc.*, a case in which the Federal Circuit reaffirmed the logic of *Mallinckrodt*.²⁰⁵

E. LESSONS FROM PERSONAL PROPERTY SERVITUDES

Concerns with insufficient notice and other information costs, harmful exter-

199. *E.g.*, *Tri-Cont'l Fin. Corp. v. Tropical Marine Enters.*, 265 F.2d 619, 626 (5th Cir. 1959); *P. Lorillard Co. v. Weingarden*, 280 F. 238, 240 (W.D.N.Y. 1922); *Nadell & Co. v. Grasso*, 346 P.2d 505, 510–12 (Cal. Ct. App. 1959); *Waring v. WDAS Broad. Station, Inc.*, 194 A. 631, 636–38 (Pa. 1937); *Clairol, Inc. v. Sarann Co.*, 37 Pa. D. & C. 2d 433, 452 (Common Pleas Ct. 1965). *See generally* Robinson, *supra* note 4, at 1455–63 (discussing *Tri-Continental*, *P. Lorillard*, *Nadell*, *Waring*, and *Clairol*).

200. *Mallinckrodt, Inc. v. Medipart, Inc.* (*Mallinckrodt II*), 976 F.2d 700, 708–09 (Fed. Cir. 1992).

201. *Id.* at 704.

202. *Id.*

203. *Id.* at 708–09; *see also* *Monsanto Co. v. McFarling*, 302 F.3d 1291, 1297–99 (Fed. Cir. 2002) (upholding injunction prohibiting a seed purchaser from using patented seeds to produce new seeds, after concluding that purchaser was unlikely to establish that restrictive “technology agreement” violated antitrust laws).

204. *Cf.* Richard H. Stern, *Post-Sale Patent Restrictions After Mallinckrodt—An Idea in Search of Definition*, 5 ALB. L.J. SCI. & TECH. 1, 33 (1994) (“[The Mallinckrodt doctrine] will subject more firms, or will subject firms more often, to the legal impact of the patent system. This will decrease the extent to which the previous beneficiaries of the exhaustion doctrine will be able to lead quiet lives without worrying about patent infringement threats and without the significant transaction costs (for example, legal fees) of having to deal with them.”).

205. *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1369–70 (Fed. Cir. 2006), *cert. granted sub nom.* *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 28 (U.S. Sept. 25, 2007) (No. 06-937).

nalities, and the problems of the future are tightly interwoven in the law of personal property servitudes, which is further complicated by its intersection with the rights of intellectual property holders in the intangible works of authorship and invention sometimes embedded in chattels. The overlapping issues make it difficult to say with confidence which factors were determinative to the outcome of the seminal cases on the subject.

Given the Supreme Court's express attention to information-cost problems and preserving free traffic in items of personal property,²⁰⁶ however, it seems at best ahistorical to suggest, as the Federal Circuit has, that the early-twentieth-century cases were motivated solely by concerns with competition that are now adequately addressed by the antitrust laws.²⁰⁷ In fact, information cost problems remain formidable in the context of personal property servitudes despite the ease of attaching notice of restrictive terms directly to the item to which they apply. The problem here is not lack of express notice, but rather lack of adequate cognition by buyers for whom careful parsing and contemplation of notice terms do not seem justified at the time of purchase but who may come to regret their decisions. Of course, buyer's remorse does not necessarily justify judicial second-guessing of voluntary transactions. But restrictions that purport to extend into the future to generations of chattel owners, and that may lead to under-use of potentially valuable tangible resources, impose social costs that have triggered—and seem still to justify—special skepticism toward chattel servitudes.

The costs associated with chattel servitudes are attributable in part to the features that problematic chattel servitudes share with problematic land servitudes: the remote and indefinite relationship between the parties to be benefited and burdened; the fragmentation of rights to control use of a single resource; the potential lack of salience to purchasers; the insulation from effective competition where servitudes are attached to resources with unique qualities; and the ubiquity of servitude restrictions imposed across entire markets. Where servitudes are attached to short-lived items of personal property, these troubling features are less enduring than they are in the land context; on the other hand, the problem of low salience and costs caused by clogging transactions loom especially large for inexpensive and mobile items of personal property.

Having explored the three categories of servitude concerns in both the land and personal property contexts, and having identified those features that make some servitudes especially problematic, I now turn my attention to the new generation of running restrictions on intangible informational resources, applying the lessons distilled from the past to assess the new servitudes.

III. THE NEW SERVITUDES

Although the twentieth-century case law addressing chattel servitudes was

206. *See supra* text accompanying notes 161–166.

207. *See Mallinckrodt II*, 976 F.2d at 704–08.

mixed and equivocal, its hostility to running restrictions on items of personal property seemed, over time, to deter the practice. In 1928, Zechariah Chafee referred to “the extensive use which business men have made of restrictions on chattels.”²⁰⁸ When he revisited the issue in 1956, he noted that few new cases involving chattel servitudes had arisen in the intervening three decades.²⁰⁹ But the late twentieth century saw something of a renaissance in the attempted imposition of restrictive terms attached to items of personal (and intellectual) property—a renaissance led by the computer software industry and joined more recently by providers of other products embodying informational and creative works.²¹⁰ These products are often accompanied by documents that purport to require or forbid certain behavior by users—whether or not the users have had any direct interaction with the authors of those terms.²¹¹

For example, users of Microsoft’s Vista operating system must indicate that they accept its “End User License Agreement” (EULA)²¹² before the program will install on their computers.²¹³ The license invites installation and use of the software, but it forbids some behaviors (like serial transfers of the user’s copy of the software and reverse engineering of the software code) that would otherwise be permitted under copyright law.²¹⁴

The GNU²¹⁵ General Public License (GPL)²¹⁶ promulgated by the Free Software Foundation is also attached to software programs and purports to govern certain aspects of their use. The language of the GPL focuses not on restrictions but rather on encouraging behavior that would otherwise be forbidden by copyright law.²¹⁷ It grants permission to copy, distribute, and modify the computer software programs to which it applies, provided that certain require-

208. Chafee, *Equitable Servitudes*, *supra* note 4, at 954.

209. Chafee, *Music*, *supra* note 4, at 1255.

210. See Radin, *supra* note 9, at 1128–33; Robinson, *supra* note 4, at 1449, 1521–22.

211. See, e.g., Radin, *supra* note 9, at 1128–33.

212. MICROSOFT SOFTWARE LICENSE TERMS, WINDOWS VISTA HOME BASIC, http://download.microsoft.com/documents/useterms/Windows_Vista_Home_Basic_English_2cd69850-7680-4987-8b1e-59a3d405c074.pdf [hereinafter Vista EULA].

213. See Deb Shinder, *Installing Windows Vista: The Good, the Bad, and the Ugly*, TECHREPUBLIC (Aug. 17, 2006), http://articles.techrepublic.com.com/5100-10877_11-6106800.html (describing the Vista installation process, which includes a “screen contain[ing] the EULA, which you must accept to continue the installation process”); see also *Kloth v. Microsoft Corp.*, 444 F.3d 312, 318 (4th Cir. 2006) (describing Microsoft practice by which “end-users were required to agree to the EULAs” that “imposed significant restrictions on use of the software by the licensee, giving Microsoft remedies against the end-user for breach of the license”).

214. See discussion *infra* accompanying notes 294–98.

215. GNU is the software project with which Richard Stallman launched the free software movement. The acronym stands for “Gnu’s Not Unix.” See Richard Stallman, *The GNU Manifesto* (1993), available at <http://www.gnu.org/gnu/manifesto.html>.

216. GNU GENERAL PUBLIC LICENSE (Version 2, June 1991), <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html> [hereinafter GPL v.2]. As discussed *infra*, the Free Software Foundation recently released version 3 of the GPL. GNU GENERAL PUBLIC LICENSE (Version 3, June 29, 2007), <http://www.fsf.org/licenses/licenses/gpl.html> [hereinafter GPL v.3]. The discussion in this section refers to the well-established version 2. The two licenses do not differ substantially with regard to the key provisions discussed here.

217. GPL v.2, *supra* note 216, at pmbl.

ments are satisfied.²¹⁸ Namely, any copies or modifications that are distributed must be accompanied by their source code and must be available on the GPL's terms.²¹⁹ The license announces that any recipient of these copies or modifications "automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions."²²⁰ So if all goes as provided in the GPL, everyone who receives a copy or modified version of the software also receives a license, and their use of the software is subject to the license terms. The GPL is the most prominent license within a family of licenses promulgated by the Free Software Foundation; others include the GNU Free Documentation License (FDL), which was designed to apply to software documentation.²²¹

Another family of licenses moves beyond the realm of computer software and into the realm of culture. Creative Commons is a non-profit organization that promotes licenses that are designed to be applied to a variety of copyrightable works, including music, text, images, and movies.²²² Like the GPL, these licenses permit copying, distribution, and, in some cases, modification of covered works, but are subject to certain conditions that copyright holders choose from a menu of terms.²²³ Among these is a "share alike" provision, which (like the GPL) requires that derivative works be licensed on the same terms.²²⁴ That is, the creator of a derivative work based upon a work licensed under a Creative Commons share-alike license must give other people permission to copy and modify that derivative work subject to the condition that they do the same with their derivative works, and so on.²²⁵

Courts have generally analyzed and enforced contemporary intellectual property licenses within a contractual framework, giving little consideration to the concerns about notice, externalities, and the future that have animated servitude skepticism.²²⁶ But several observers of these licensing practices have noted their resemblance to the chattel servitudes that were questioned and often invalidated in the early twentieth century.

For example, Glen Robinson argues that courts' failure accurately to characterize these licenses as servitudes is misleading; he ultimately concludes, however,

218. *Id.*

219. *See id.* at paras. 1–3.

220. *See id.* at para. 6.

221. GNU FREE DOCUMENTATION LICENSE pmbl. (Version 1.2, 2002), <http://www.fsf.org/licensing/licenses/fdl.html>.

222. Creative Commons, History, <http://wiki.creativecommons.org/History> (last visited Dec. 31, 2007).

223. Creative Commons, Choosing a License, <http://creativecommons.org/about/licenses> (last visited Dec. 31, 2007).

224. *Id.*

225. *Id.* This requirement of identical permissive licensing of derivatives of a licensed work is often referred to as a "copyleft" provision. *See, e.g.,* LAWRENCE ROSEN, OPEN SOURCE LICENSING: SOFTWARE FREEDOM AND INTELLECTUAL PROPERTY LAW 105–06 (2005); Free Software Foundation, What Is Copyleft?, <http://www.fsf.org/licensing/essays/copyleft.html> (last visited Dec. 31, 2007).

226. *See, e.g.,* Mark A. Lemley, *Terms of Use*, 91 MINN. L. REV. 459, 459–63 (2006).

that enforcement is consistent with the liberalizing attitude toward land servitudes and rightly represents the preeminence of freedom of contract over hostility to restraints on resource use and transfer.²²⁷ More skeptical observers, including Niva Elkin-Koren and Margaret Jane Radin, suggest that these contemporary licensing techniques should trigger the kind of skepticism more traditionally associated with running property restrictions.²²⁸ Both the champions and the skeptics tend to extend their assessments to both commercial software licenses like Microsoft's EULA and to the GPL, Creative Commons licenses, and other licenses promulgated as part of the "free software" and "free culture" movements.²²⁹

In this Part, I engage in a more finely grained assessment of whether the concerns that have animated servitude skepticism are relevant to contemporary licensing practices. Examining the paradigmatic examples of the Microsoft EULA, the GPL, and Creative Commons licenses, I find that problems with notice, externalities, and unanticipated future impacts can in fact plague these new servitudes and in some instances loom even larger than they do in the land and personal property contexts in which they originally arose. But the new servitudes are far from monolithic, and their status is complicated by their intersection with the background laws of intellectual property. Assessing them and the concerns they raise therefore requires a more discriminating analysis than they have received to date, an analysis to which I turn after tracing the evolution of the new servitudes.

A. THE EVOLUTION OF THE NEW SERVITUDES

At first, computer software was distributed with no strings attached. In the 1950s and early 1960s, computer manufacturers provided their customers with operating systems and some fundamental software at no extra charge. These hardware manufacturers did not typically deploy intellectual property rights or any other techniques for controlling how their software could be used, copied, or distributed.²³⁰ The software provided for free by hardware manufacturers was seldom adequate to perform their customers' specific tasks, however. Thus, many computer users had large in-house programming staffs.²³¹ Here too, the programs that resulted were not generally considered proprietary. Programmers

227. Robinson, *supra* note 4.

228. Elkin-Koren, *supra* note 9, at 377, 407; Radin, *supra* note 9.

229. See Elkin-Koren, *supra* note 9; Gomulkiewicz, *supra* note 13; Radin, *supra* note 9, at 420; Robinson, *supra* note 4.

230. See, e.g., MARTIN CAMPBELL-KELLY, FROM AIRLINE RESERVATIONS TO SONIC THE HEDGEHOG: A HISTORY OF THE SOFTWARE INDUSTRY 98 (2003); Martin Campbell-Kelly, *Not All Bad: An Historical Perspective on Software Patents*, 11 MICH. TELECOMM. & TECH. L. REV. 191, 210 (2005); Martin Goetz, *Memoirs of a Software Pioneer* (pt. 1), IEEE ANNALS HIST. COMPUTING, Jan.-Mar. 2002, at 43, 49; Peter S. Menell, *Envisioning Copyright Law's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 73 (2002-2003); Pamela Samuelson, *A Case Study on Computer Programs*, in GLOBAL DIMENSIONS OF INTELLECTUAL PROPERTY RIGHTS IN SCIENCE AND TECHNOLOGY 284, 284 (Wallerstein et al. eds., 1993).

231. CAMPBELL-KELLY, *supra* note 230, at 29-30.

participated in computer user groups where they shared programs and techniques.²³² Users whose programming tasks went beyond their in-house capacities (as augmented by the free software provided by hardware manufacturers and by user groups) turned to providers of custom programming services.²³³ Programming was done under contract to specific users to solve their particular problems.²³⁴ The companies providing that programming did not intend to resell additional copies of the custom programs they developed, so controlling copying by others was not a priority.²³⁵

This situation changed somewhat when, in the mid-1960s, independent software companies first began to develop “software products”—non-custom programs marketed to multiple customers.²³⁶ Because the market for these non-customized software products could be easily undermined by indiscriminate copying of a developer’s programs, software product companies began for the first time to devote significant energy and resources to controlling downstream use and copying of their software.²³⁷

It was not obvious in the late 1960s whether this control was possible and how it might best be achieved.²³⁸ The U.S. Copyright Office announced in 1964 that it would accept copyright registrations for computer programs, but only under its “rule of doubt,”²³⁹ and only if source code was deposited in the Library of Congress.²⁴⁰ Deposit was an unattractive prospect for many developers, who worried about revealing programming techniques to their competitors.²⁴¹ Meanwhile, the patentability of software was unclear (and disfavored by the U.S. Patent and Trademark Office).²⁴²

232. *Id.* at 31–34; MARTIN CAMPBELL-KELLY & WILLIAM ASPRAY, *COMPUTER: A HISTORY OF THE INFORMATION MACHINE* 173 (2004).

233. CAMPBELL-KELLY, *supra* note 230, at 89.

234. Campbell-Kelly, *supra* note 230, at 211.

235. *See* CAMPBELL-KELLY, *supra* note 230, at 107; Menell, *supra* note 230, at 73–74; Samuelson, *supra* note 230, at 284. *But see* Milton R. Wessel, *Legal Protection of Computer Programs*, HARV. BUS. REV., Mar.–Apr. 1965, at 97 (making an early argument for protecting rights in computer programs).

236. *See, e.g.*, Goetz, *supra* note 230, at 43; Menell, *supra* note 230, at 74.

237. *See* Goetz, *supra* note 230, at 49; Samuelson, *supra* note 230, at 284–85.

238. *See generally* Robert B. Bigelow, *Legal Aspects of Proprietary Software*, DATAMATION, Oct. 1968, at 32 (reviewing the various legal regimes that could be used to protect software, including copyright, patent, trademark, trade secrets, unfair competition, tax, and contract).

239. The Copyright Office’s internal manual explains the “rule of doubt”:

[The Office] will register a claim even though there is a reasonable doubt about the ultimate action which might be taken under the same circumstances by an appropriate court with respect to whether (1) the material deposited for registration constitutes copyrightable subject matter or (2) the other legal and formal requirements of the statute have been met.

U.S. COPYRIGHT OFFICE, *COMPENDIUM OF COPYRIGHT OFFICE PRACTICES* § 605.05 (1984), *available at* http://ipmall.info/hosted_resources/CopyrightCompendium/chapter_0600.asp.

240. *Copyright Registration for Computer Programs*, 11 BULL. COPYRIGHT SOC’Y 361, 369 (1964); *see also* Samuelson, *supra* note 230, at 285–86 (discussing the Copyright Office’s 1964 policy); Wessel, *supra* note 235, at 97, 103 (same).

241. Samuelson, *supra* note 230, at 286.

242. *Examination of Patent Applications on Computer Programs*, 33 Fed. Reg. 15,609, 15,610 (Oct. 22, 1968); *see also* PRESIDENT’S COMM’N ON THE PATENT SYS., “TO PROMOTE THE PROGRESS OF . . . USEFUL

In light of these legal and strategic uncertainties about protection of software products under federal intellectual property law, many software developers relied at least in part on state trade-secret laws protecting valuable and secret business information against disclosure and misappropriation.²⁴³ Although software producers had to reveal some aspects of their “secret” software to the customers to whom it was distributed, they attempted to maintain the enforceable legal fiction of secrecy by requiring their customers to sign non-disclosure agreements and by distributing only the object code (and thereby not revealing the programming techniques evident in the source code).²⁴⁴ In the early years of the software products industry, it was feasible to negotiate these agreements directly with customers because a typical software product was distributed to only a few hundred recipients—usually corporate information technology managers who paid thousands of dollars to install the software on company mainframes and could reasonably be expected to read and comprehend the contracts they signed.

The trade-secrecy model came under stress in the late 1970s and 1980s with the rise of truly mass-marketed software products, which developed in parallel to the development and increasing availability of inexpensive personal computers.²⁴⁵ Instead of selling hundreds of copies of software products directly to corporate managers for tens of thousands of dollars, software companies were now selling tens or even hundreds of thousands of copies through a chain of distribution to individual end users who paid hundreds of dollars at most.²⁴⁶ This distribution model made it impractical to require customers to negotiate and sign individual non-disclosure agreements.²⁴⁷ Instead, a typical mass-

ARTS” IN AN AGE OF EXPLODING TECHNOLOGY 12 (1966) (suggesting that programs for the operation of “data processing machine[s]” should not be patentable); Samuelson, *supra* note 230, at 286–88; Pamela Samuelson, Benson *Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 EMORY L.J. 1025, 1039–40 (1990); Wessel, *supra* note 235, at 103.

243. Richard I. Miller, *The CONTU Software Protection Survey*, 18 JURIMETRICS J. 354, 357 (1978) (citing 1973 study finding that “copyright protection ranked third in preferred modes of protection, behind trade secret licenses and leases with confidential disclosure clauses”).

244. See David Bender, *Trade Secret Protection of Software*, 38 GEO. WASH. L. REV. 909, 928–29 (1970); see also *Comptroller of the Treasury v. Equitable Trust Co.*, 464 A.2d 248, 252 (Md. 1983); Glenn J. MacGrady, *Protection of Computer Software—An Update and Practical Synthesis*, 20 Hous. L. REV. 1033, 1034 (1983).

Computer programmers use various programming languages to write source code, which is then compiled into machine-readable ones and zeros (“object code” or “binaries”). Steven Weber helpfully explains:

The source code is basically the recipe for the binaries; and if you have the source code, you can understand what the author was trying to accomplish when she wrote the program—which means you can modify it. If you have just the binaries, you typically cannot either understand or modify them.

STEVEN WEBER, *THE SUCCESS OF OPEN SOURCE* 4 (2004).

245. See Miles R. Gilburne & Ronald L. Johnston, *Trade Secret Protection for Software Generally and in the Mass Market*, 3 COMPUTER/L.J. 211, 227–28 (1982).

246. See CAMPBELL-KELLY, *supra* note 230, at 215 tbl.7.3.

247. Contemporaneous commentators noted in 1982:

market consumer software program was distributed in object code form on a disk enclosed in packaging bearing a label announcing that opening the package amounted to agreement to terms of use imposed by the software publisher (terms which were often included inside the box, but were sometimes visible on the outer packaging).²⁴⁸ These instruments were known variously by terms including “box-top licenses” and “tear-open licenses.”²⁴⁹ But the preferred terminology became “shrink-wrap license,” reflecting the practice of sealing software boxes in transparent plastic shrink-wrap that covered, but did not obscure, the label announcing that removing the shrink-wrap indicated acceptance of the software publisher’s terms.²⁵⁰

These shrink-wrap licenses typically included restrictions on reproduction of the software, redistribution of the initial copy (that is, the copy fixed on the disk inside the shrink-wrapped box), and reverse engineering of the object code.²⁵¹ They also usually asserted, more generally, that the software was secret and proprietary and that the consumer was under a duty of confidentiality with regard to its contents.²⁵² The aim was to maintain the legal fiction of “secrecy” and to bind the package opener to these restrictions and obligations as a contractual matter.²⁵³ Unlike a traditional contract, however, the terms “ran with” the boxes to which they were attached in that they purported to impose restrictions even on those consumers who purchased software from third-party retailers and had no direct contact with the software publisher.

These attempts to create the legal fiction of “secrecy” and contractual privity, regarding information that was publicly distributed on the open market to strangers with whom the publisher often had no direct interaction, were scorned by some commentators. They initially met with only mixed results in the

In recognition of the tremendous administrative and practical difficulties of obtaining executed license agreements from customers of mass-distributed software, developers have increasingly been abandoning such an approach. Instead, licensors are simply providing the software in a sealed diskette and are, concurrent with the delivery, providing the customer with a set of Standard License Terms and Conditions. These terms and conditions, as well as a legend placed on the diskette, specify that the customer will be deemed to have accepted the Standard License Terms and Conditions by the act of breaking the seal on the diskette or actually using the software.

Gilburne & Johnston, *supra* note 245, at 228.

248. See, e.g., MARGARET JANE RADIN ET AL., INTERNET COMMERCE: THE EMERGING LEGAL FRAMEWORK 298 & n.6 (2002) (describing shrink-wrap and click-wrap licenses); Michael J. Madison, *Legal-Ware: Contract and Copyright in the Digital Age*, 67 *FORDHAM L. REV.* 1025, 1055–56 (1998) (describing shrink-wrap licenses).

249. See David A. Einhorn, *Box-Top Licenses and the Battle-of-the-Forms*, 5 *SOFTWARE L.J.* 401, 401–02 (1992).

250. Madison, *supra* note 248, at 1055–56.

251. See, e.g., Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 *S. CAL. L. REV.* 1239, 1246–47 (1995).

252. See *id.* at 1244–45.

253. See *id.*

courts.²⁵⁴ But they laid the groundwork for what has become a widespread technique for imposing a variety of restrictions on software users. Software publishers continue to employ shrink-wrap licenses despite the fact that the copyrightability and patentability of software became clearer in the 1980s and 1990s. They have also developed variations on the technique, including “click-wrap” and “browse-wrap” licenses that purport to impose restrictions on users of software who click “I agree” in response to a prompt that appears on their computer screens (“click-wrap”), or who download software from a website on which restrictive terms are posted (“browse-wrap”). Much like servitudes imposed on land or tangible personal property, these licenses purport to establish obligations that bind anyone who uses the software. The goal is for the limitations imposed by a license effectively to run with each copy of the software and for every existing copy of the software to be encumbered with the same limitations. The EULA that accompanies Microsoft Vista—the latest version of the market-dominating Microsoft Windows operating system²⁵⁵—is a typical example. In order to install Vista, a would-be user has to check an “I agree” box on a screen referring to the EULA.²⁵⁶ Among other things, the license forbids reverse engineering of the software and restricts transfer of the copy of the software acquired by the user.²⁵⁷

These licensing developments in the commercial software industry overlapped in time, but not in spirit, with the rise of the “free software” movement, led by Richard Stallman. As an academic computer scientist at MIT, Stallman was frustrated with the secrecy and exclusiveness practiced by commercial software publishers in the late 1970s and early 1980s.²⁵⁸ He developed and championed an alternative model, embodied in and implemented by the GPL. The success of the GPL and of the free software movement inspired similar “free culture” initiatives, including the promulgation of the Creative Commons family of licenses described above.²⁵⁹ The GPL and Creative Commons licenses characterize themselves primarily as grants of permission to use otherwise proprietary material.²⁶⁰ But—like the Microsoft EULA and other commercial software licenses—both licenses also impose restrictions on that use.²⁶¹ And in

254. *E.g.*, Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 528 n.211 (1998).

255. On the market-dominance of Microsoft Windows, see *United States v. Microsoft Corp.*, 253 F.3d 34, 54–56 (D.C. Cir. 2001).

256. *See supra* note 213.

257. Vista EULA, *supra* note 212, §§ 8, 16; *see also* discussion *infra*, accompanying notes 294–98.

258. *See generally* WEBER, *supra* note 244, at 46.

259. *See* Creative Commons, “Some Rights Reserved”: Building a Layer of Reasonable Copyright, <http://wiki.creativecommons.org/History> (last visited Dec. 31, 2007).

260. *See, e.g.*, GPL v.3, *supra* note 216, at para. 2 (explaining “Basic Permissions” of the GPL); CREATIVE COMMONS ATTRIBUTION 3.0 UNPORTED LICENSE para. 3, <http://creativecommons.org/licenses/by/3.0/legalcode> (granting “a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below”).

261. *See, e.g.*, GPL v.3, *supra* note 216, at paras. 5–6 (setting forth restrictions); CREATIVE COMMONS ATTRIBUTION 3.0 UNPORTED LICENSE, *supra* note 260, at para. 4 (similar).

each case those restrictions purport to apply to anyone who encounters the work to which the terms are attached.²⁶² Some critics who question commercial software licenses on the basis of their servitude-like character therefore extend that characterization—and their criticism—to both the GPL and Creative Commons licenses.²⁶³ But, in fact, some of these contemporary licensing practices are more problematically servitude-like than others, as I now demonstrate by evaluating these paradigmatic examples of contemporary licensing practices and assessing whether they in fact have the specific servitude-like features that create notice and information costs, problems of the future, and negative externalities.

B. NOTICE AND INFORMATION COSTS

As described above, the jurisprudence regarding land and personal property servitudes is shaped in part by concern with notice and information costs. For land servitudes, the lack of a recording system in England made nineteenth-century English courts skeptical of running land obligations or restrictions—especially those that were not by their nature easy to discover upon inspection. This concern with notice motivated doctrinal limitations like the prohibition on negative easements and the touch and concern requirement. In the United States, by contrast, the availability of land recording has over time convinced many courts and commentators that at least some of the traditional limitations are unnecessary.²⁶⁴

As for chattel servitudes, there is no comprehensive recording system to solve the notice problem. But it is often possible physically to attach some form of written notice to an object of personal property. Courts and commentators differ in their assessment of the effectiveness of such labels. In its early-twentieth-century chattel servitude cases, the U.S. Supreme Court seemed skeptical that consumers would read and comprehend such label notices in a way that would reliably lead them to make informed and efficient purchase decisions.²⁶⁵ Some contemporary courts and commentators are similarly skeptical, while others are more optimistic.²⁶⁶

I take a relatively skeptical position in my discussion above, observing that chattels often have characteristics that make it unlikely—and sometimes undesirable—that consumers will take full consideration of the restrictions and obligations that a seller has attached via a label. As compared to land, chattels are

262. See, e.g., GPL v.3, *supra* note 216, at para. 10 (providing that “[e]ach time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License”); CREATIVE COMMONS ATTRIBUTION 3.0 UNPORTED LICENSE, *supra* note 260, at para. 8(a) (providing that “[e]ach time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License”).

263. See, e.g., Elkin-Koren, *supra* note 9, at 407–22.

264. See discussion *supra* section I.B.

265. See *supra* section II.A.

266. See sources cited *supra* notes 161, 168–71.

typically inexpensive and simple—making consumers unlikely to invest the time and energy necessary to comprehend what may at the time of purchase be non-salient terms. If consumers were to take the time to comprehend such terms, they might thereby clog up transactions that would ideally be conducted quickly and inexpensively.²⁶⁷

When we turn to running restrictions imposed on computer software and other intangible works (and on the objects embodying them), the notice and information-cost calculus becomes yet more complicated. On the one hand, it can be even easier to attach notice of restrictive terms directly to intangible works than to other items of personal property.²⁶⁸ The size and shape of a physical object and its packaging may impose practical limitations on the terms that can be communicated via label. Not so, for example, with a digital software file into which many pages of text can easily be inserted.²⁶⁹

The problem that remains, however, is that even explicit and firmly attached notice is not effective for people who do not read it or fully integrate it into their decisions. This is, of course, a potential problem with traditional, bilateral contracts as well—one to which contract doctrine is not normally very sympathetic.²⁷⁰ But, as discussed above, when restrictions—even those that purport to be “contractual”—attach to and run with objects or intangible intellectual works, they can raise special concerns with notice and information costs that distinguish them from traditional contracts. The specific features of chattel servitudes that raise these concerns include the remoteness between the parties, the durability and ubiquity of restrictions that run automatically to everyone who acquires a type of good, and the special lack of salience of restrictive features bundled with possession of inexpensive objects.

The early software licenses did not generally exhibit these features, and thus did not raise the notice and information-cost problems that I associate with restrictions attached to chattels. But as the software market broadened starting in the late 1970s, both the techniques for providing notice and the likely

267. See discussion *supra* section II.B.1.

268. Robert Merges observes: “Unlike an easement (or servitude), evidence of which does not normally appear on the face of the land, digital content is quite capable of providing notice concerning the ownership rights retained by its creator or other parties.” Merges, *supra* note 9, at 122. Similarly, Merrill and Smith observe that “[n]otice is arguably easier to furnish (if not to process) when, for example, rights to digital content are being transferred, and notice of restrictions and other features of rights transferred are technologically not difficult to provide.” Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 42.

269. This is not true for all artifacts embodying intellectual works. Standard audio compact disks, for example, do not normally display pages of text when played, and inserting lots of text into the packaging might be impractical.

270. In the contract law context in which software licenses are typically interpreted and enforced, courts generally impose a duty to read, enforcing contract terms based on the objectively manifested intent of the parties despite their subjective failure even to read the words of the purported contract. See, e.g., *DeJohn v. The .TV Corp. Int'l.*, 245 F. Supp. 2d 913, 919 (N.D. Ill. 2003). See generally Korobkin, *supra* note 60, at 1265–73 (discussing the “traditional rule that a buyer has a duty to read any form contract that he signs”).

sophistication and carefulness of the average consumer changed. Instead of individually negotiated contracts signed by corporate managers making significant investments of their companies' resources, these transactions often involved inexpensive software purchased by home users in retail stores, or via mail or phone order, with no direct interaction between the customer and a representative of the software developer. The purported terms of the transaction were provided not by a knowledgeable salesperson (whom one might ask for modification or clarification), but rather by printing on the outside of an inanimate cardboard box.²⁷¹ Today, the situation is similar, although the mechanism of notice is less often a cardboard box and instead a similarly lifeless online box that entreats a would-be software user to click "I agree."²⁷² The Microsoft Vista EULA employs this technique.²⁷³ The GPL and Creative Commons licenses do not typically even provide that degree of interaction between licensor and licensee, simply appearing on a website where licensed content is posted, or within the source code of covered software.

These contemporary licensing practices—unlike their predecessors—resemble problematic chattel servitudes in several respects related to notice and information costs. They typically arise out of relatively low-value, one-time transactions in which at least some non-drafting parties are unlikely to invest much time and attention. Indeed, the software and creative works to which the GPL and Creative Commons licenses are attached are usually distributed for free. Even relatively expensive software typically costs at most hundreds of dollars for home use, and that cost is often combined with the price of a computer hardware package in a way that makes details of the software agreement even less likely to be salient to consumers. And, indeed, the empirical evidence available to date suggests that most people do not read license agreements like these, and those that do read often do not make decisions based upon their content.²⁷⁴

These hurdles to salience are compounded by the fact that the restrictions are bundled with possession of copies of works that are protected by intellectual property rights and thus are insulated—at least to some extent—from perfect competition.²⁷⁵ Where one intellectual property owner licenses every copy of a work under a single set of license terms—as is often the case—the resulting

271. See, e.g., Michael J. Madison, *Legal-Ware: Contract and Copyright in the Digital Age*, 67 *FORDHAM L. REV.* 1025, 1055–56 (1998).

272. See, e.g., *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1452 (7th Cir. 1996).

273. See *supra* note 213.

274. See, e.g., Nathaniel Good et al., *Noticing Notice: A Large-Scale Experiment on the Timing of Software License Agreements*, in *PROCEEDINGS OF ACM CHI 2007 CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS* (2007); see also Sarah Spiekermann et al., *E-privacy in 2nd Generation E-commerce: Privacy Preferences Versus Actual Behavior*, in *PROCEEDINGS OF THE THIRD ACM CONFERENCE ON ELECTRONIC COMMERCE* 38 (2001), available at http://people.ischool.berkeley.edu/jensg/research/paper/grossklags_e-Privacy.pdf (finding, in the privacy context, that Internet users' behavior does not comport with their expressed preferences).

275. See David Nimmer et al., *The Metamorphosis of Contract into Expand*, 87 *CAL. L. REV.* 17, 60–61 (1999).

ubiquity can further limit the options of (and thus the opportunities for thoughtful shopping by) users who value the work's special characteristics.²⁷⁶

Finally, these licenses purport to travel with the objects to which they attach without requiring any interaction between the parties and can thus potentially affect more parties than a contract formed through human interaction. This remoteness between the parties also makes clarification or negotiation of problematic terms unlikely. In the case of licenses offered by an identifiable and well-known entity—Microsoft, for example—it is at least conceivable that one could identify and communicate with a person at the company regarding the terms of its license agreements and possible alternatives. But many works distributed under other licenses are anonymous—with the claimed restrictions to be enforced by unknown licensors—or, to add even further complication, by thousands of unknown and unconnected authors who have contributed to a work that has been serially modified.

Under these circumstances, the availability of the express terms of a restrictive license is no guarantee that those terms will be well understood by recipients or fully incorporated into their decision-making processes. As with the restrictive labels affixed to record players in *Straus v. Victor Talking Machine Co.*, “it must be recognized that not one purchaser in many would read such a notice, and that not one in a much greater number, if he did read it, could understand its involved and intricate phraseology.”²⁷⁷

Any potential shortcomings in the notice provided by licenses attached to software and other works of authorship must be understood against the background law of copyright, however. In both the land and chattel contexts, one concern with servitudes is that they are bundled with possession of tangible objects in a way that upsets ingrained expectations about a lawful possessor's rights to use her possessions.²⁷⁸ Dislodging that expectation is likely to be especially difficult or costly (or both) in the chattel context, because the relative cheapness and simplicity of chattels yields the additional expectation and practice of rapid and simple transactions. This background assumption of simplicity is not possible when the asset at issue is an original work of authorship subject to copyright protection.

After a series of amendments to the Copyright Act starting in 1976, federal copyright protection is now triggered simply by fixation of an original work in a tangible medium of expression—for example, by scribbling words on a napkin or typing them onto a computer.²⁷⁹ In a departure from prior law, registration, notice, deposit, and publication are not required to secure protection (and no renewal registration is required to take advantage of the longest possible

276. Regarding the relevance of ubiquity, see generally Merges, *supra* note 9, at 126 (suggesting that a ubiquitous contractual form “can operate as a form of ‘private legislation’ that restricts federally conferred rights every bit as much as a state statute”).

277. 243 U.S. 490, 501 (1917).

278. See discussion *supra* notes 62–65, 174 and accompanying text.

279. See 17 U.S.C. § 102 (2000).

copyright term). Those barriers have been removed and copyright protection is now automatic.²⁸⁰ This means that when someone comes upon what appears to be an original work of expression fixed in a tangible medium—an old photograph, for example—she does not know how the work is encumbered by copyright.²⁸¹ It could be in the public domain because it was published without notice during a time when copyright could be lost that way; it could be in the public domain because its copyright has expired; or it could be under copyright, held by an unknown copyright holder. Without more information, the only safe assumption is that all of those activities that implicate the exclusive rights granted by copyright (reproduction, public distribution, preparation of derivative works, et cetera) are forbidden. For anyone who acquires a copy of a work of authorship intending to use it in a way that implicates copyright, the transaction will seldom be simple or fluid.

Against this background of potentially hidden copyright restrictions, licenses attached to works protected by copyright do not necessarily introduce informational and transactional complexities where there were none before. Take the Creative Commons licenses; although some of the conditions imposed by these licenses differ in substance from copyright law, they are all triggered by activities that are within the copyright holder's exclusive rights. They thus complicate only that subset of transactions that are already complicated by copyright.²⁸² Their enforceability is therefore supported by the distinction drawn above between restrictions attached to otherwise unregulated consumer uses of chattels embodying copyrighted or patented works (which *Bobbs-Merrill* and *Adams* held should not be complicated by running restrictions on transfer) and restrictions attached to a grant of permission to exercise intangible rights of reproduction or manufacture that are otherwise reserved to the intellectual property holder (the type of restrictions upheld in cases like *United States v. General Electric*).²⁸³

For example, all Creative Commons licenses require that publicly distributed copies and derivative works properly attribute the original author.²⁸⁴ Attribution is not, per se, an exclusive right of a copyright holder.²⁸⁵ But reproducing the copyrighted work and making derivative works based upon it are exclusive

280. See Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 494 (2004); see also U.S. COPYRIGHT OFFICE, REGISTER OF COPYRIGHTS, REPORT ON ORPHAN WORKS 3 (2006).

281. Cf. William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 477 (2003) (describing the tracing costs involved in identifying the copyright holders of old works).

282. Whether or not the complications within copyright law itself are acceptable is beyond the scope of this paper. But note that complexity that might be objectionable when introduced by private actors backed by state common law might not be objectionable when introduced by legislative action. See generally Merrill & Smith, *Optimal Standardization*, *supra* note 6, at 58–68.

283. See discussion *supra* section II.B.2.

284. The author and/or licensor can also “designate another party or parties (e.g., a sponsor institute, publishing entity, journal)” to receive attribution. See, e.g., CREATIVE COMMONS ATTRIBUTION-NONCOMMERCIAL-NO DERIVS 3.0 UNPORTED LICENSE para. 4(c), <http://creativecommons.org/licenses/by-nc-nd/3.0/legalcode> [hereinafter CREATIVE COMMONS ATTRIBUTION-NON-COMMERICAL-NO DERIVS].

285. With narrow exceptions. See 17 U.S.C. § 106A (2000).

rights.²⁸⁶ A license on a photograph that waives those exclusive rights on the condition that copying and adaptation are accompanied by attribution does not complicate an otherwise simple situation. Even without such a condition, someone who acquired the photograph would need to conduct an information-intensive investigation to determine whether she could lawfully reproduce it given that reproduction is one of the exclusive rights that copyright law grants to copyright holders.²⁸⁷

The information-cost problem would be more serious if these licenses imposed conditions on behavior outside the scope of copyright law's exclusive rights²⁸⁸—if, for example, Creative Commons licenses required attribution even on adaptations of the covered work that were too dissimilar to the original to count as “derivative works” under copyright law, or on reproductions of the covered work that amounted to non-infringing “fair use.”²⁸⁹ It seems unlikely that Creative Commons licenses would ever be interpreted so broadly, since they expressly provide that “[n]othing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.”²⁹⁰

There is, however, some controversy on this point in the context of the GPL. The GPL imposes conditions on copying and distribution of a covered computer program and “work based on the Program.” Under the widely adopted Version 2 of the GPL, “work based on the Program” is in turn defined as “either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language.”²⁹¹ While this language refers directly to copyright law, its definition of “work based on the Program” is arguably broader than the legal definition of “derivative work,” at least under U.S. law.²⁹² Not every program that contains “a

286. *See id.* § 106 (2000 & Supp. II 2002).

287. The exclusive rights of copyright technically apply only to the intangible “work” embodied in the chattel, and not to the chattel per se. *See id.* § 202 (2000) (“Ownership of copyright . . . is distinct from ownership of any material object in which the work is embodied.”).

288. Mark Lemley makes a similar distinction. *See* Lemley, *supra* note 9, at 144 (observing that “one might perhaps draw a reasonable distinction between cases in which a copyright owner licenses less than her entire bundle of rights to a licensee under terms consistent with the copyright laws, and cases in which the copyright owner licenses some or all rights to a licensee only on the condition that the licensee give up other rights granted him by the copyright laws”); *see also* Nimmer et al., *supra* note 275, at 63 (“If a copyright owner contracts to exploit a work up to the limits of his constitutionally and congressionally conferred monopoly, he is acting legitimately; conversely, if an author uses contract law to enlarge that monopoly to apply to exploitations beyond its congressionally sanctioned orbit, she is behaving illegitimately.”).

289. Niva Elkin-Koren raises (without endorsing) this possibility. Elkin-Koren, *supra* note 9, at 404 (querying whether an educational use that would be considered fair use under copyright law might nonetheless run afoul of a Creative Commons license for failing to provide attribution).

290. *E.g.*, CREATIVE COMMONS ATTRIBUTION-NONCOMMERCIAL-NO DERIVS, *supra* note 284, at para. 2.

291. GPL v.2, *supra* note 216, at para. 0.

292. *Cf.* 2 NIMMER ON COPYRIGHT § 8.09[A] (2004) (“Unless sufficient of the pre-existing work is contained in the later work so as to constitute the latter an infringement of the former, the latter by definition is not a

portion of' a GPL-licensed program will be similar enough to the original to constitute a derivative work. If the GPL were interpreted nonetheless to impose conditions on preparing, copying, and distributing such a program, those conditions would be more restrictive than the background law of copyright—and thus potentially surprising to someone who did not receive adequate notice of the GPL's terms or fully contemplate them. The recently released Version 3 of the GPL appears to eliminate this ambiguity and to hew more closely to copyright law by using the term "work 'based on' the earlier work" to refer to works that result from "copy[ing] from or adapt[ing] all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy."²⁹³

Microsoft's Vista EULA offers a clearer example of a license that in fact imposes limitations that exceed the baseline restrictiveness of copyright. This license does restrict behavior that copyright law leaves unregulated, thereby adding new complications to transactions that might otherwise be simple. For example, the EULA purports to control and limit "use" of the software even though "use" per se is not an exclusive right of the copyright holder.²⁹⁴ Similarly, it forbids reverse engineering²⁹⁵ although copyright law privileges reverse engineering of software for some purposes (even where the reverse engineering involves making a complete copy of the copyrighted work).²⁹⁶ And in a seemingly direct confrontation with cases like *Bobbs-Merrill* and with the copyright first-sale doctrine that emerged in part from those cases,²⁹⁷ the EULA restricts (although it does not entirely forbid) transfer of the physical copy of the software acquired by the user.²⁹⁸

In sum, examining paradigmatic contemporary licensing practices to determine whether they share the features that have triggered notice and information-cost concerns in the contexts of land and chattel servitudes yields mixed results. On the one hand, the Microsoft EULA, the GPL, and Creative Commons licenses all purport to apply down a chain of distribution to remote users with no direct connection to the licensor. Furthermore, they impose these restrictions in the context of inexpensive transactions in which restrictive terms are bundled with access to unique intellectual assets that are partially insulated from competition—thereby reducing consumers' motivation and opportunity to fully understand and compare terms. On the other hand, those licenses (including Creative Commons licenses and, less clearly, the GPL) that contain restrictions triggered

derivative work. Therefore, if the latter work does not incorporate sufficient of the pre-existing work as to constitute an infringement of either the reproduction right, or of the performance right, then it likewise will not infringe the right to make derivative works because no derivative work will have resulted. Countless works are 'inspired by' or 'based on' copyrighted works, and in that lay sense constitute 'derivative works.' But unless the product is substantially similar to its forbear, it remains nonactionable.").

293. GPL v.3, *supra* note 216, at para. 0.

294. Vista EULA, *supra* note 212, § 2.

295. *Id.* § 8.

296. *See, e.g.,* *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1520–28 (9th Cir. 1992).

297. *See* discussion *supra* section II.A.3.

298. Vista EULA, *supra*, note 212, § 16.

by behavior that is otherwise prohibited by copyright law do not complicate transactions that would otherwise be simple and consistent with consumers' reasonable expectations about their freedom to use their possessions. Viewed relative to the baseline of copyright law, they do not impose the same type of notice and information costs that are imposed by those licenses (including the Microsoft EULA) that introduce new restrictions on behavior that the background law leaves unregulated.

C. THE PROBLEM OF THE FUTURE

Another lesson that emerges from the case law and literature on land and chattel servitudes is that even running restrictions that are well understood and efficient when first imposed can, over time, cause underuse or inefficient use of the resources subject to the restriction. In the land context, for example, a parcel bound by a servitude may be locked into agricultural uses long after changes in surrounding land uses make agriculture unsustainable in the area. In the personal-property context, a piece of equipment may fall into desuetude if it may only be used with obsolete materials. In theory, servitudes that have become socially undesirable can be voluntarily renegotiated, but transaction costs can make voluntarily solutions unlikely.

The concern with waste of tangible resources that become obsolete over time is less powerful where servitudes attach to objects with little inherent value—like the punch cards, magnetic tapes, and disks on which software and other works of authorship are often distributed.²⁹⁹ And waste of tangible resources seems completely irrelevant where distribution is accomplished via disembodied digital files transmitted via the Internet.³⁰⁰

The problem of the future that looms larger in this context is underuse of intangible resources. Some degree of theoretically inefficient underuse is the necessary consequence of exclusive intellectual property rights.³⁰¹ But the “delicate balance” at the heart of intellectual property law is premised on the notion that restrictions on use of intellectual resources (for which the marginal cost of reuse is zero) should be no greater than necessary to incentivize creativity and innovation.³⁰² Voluntarily imposed restrictions above and beyond

299. Environmental degradation is a concern, however. See Larry West, *Digital Music: Coming to a Landfill near You*, ABOUT.COM, <http://environment.about.com/od/earthtalkcolumns/a/digitalmusic.htm> (last visited Jan. 1, 2008). See generally Silicon Valley Toxics Coalition, <http://svtc.etoxics.org> (last visited Jan. 1, 2008) (organization promoting recycling of electronic products).

300. There may, however, be issues with waste of the hardware on which those files are then stored—imagine an iPod loaded with music subject to obsolete terms.

301. See, e.g., Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in NAT'L BUREAU OF ECON. RESEARCH, *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609, 616–17 (1962) (explaining that information “should, from the welfare point of view, be available free of charge” and that “[i]n a free enterprise economy, inventive activity is supported by using the invention to create property rights; precisely to the extent that it is successful, there is an underutilization of the information”).

302. See, e.g., Landes & Posner, *supra* note 281, at 481.

those imposed by intellectual property law—especially when accepted unthinkingly by inattentive users of software and other intellectual goods—may inefficiently restrict future use of those intangibles under circumstances in which the restrictions are not fully justified by any incentive effect or other social benefit.

Even if we assume, unrealistically, that people who acquire intellectual resources burdened with use restrictions do so with full understanding of those restrictions and in exchange for something of commensurate value to them, the prospect of inefficient and undesirable loss of future opportunities for use of creative and inventive works remains. It may be difficult even for a careful license reader to foresee in advance the ways in which she might later want to use an intellectual resource. As Julie Cohen has documented, one of the hallmarks of creativity is “not knowing in advance” what one is going to create, what the inputs will be, or from where the inspiration will come.³⁰³ Lack of foresight about one’s own creative and inventive future could lead to acceptance of restrictions—for example, the restrictions on reverse engineering imposed by the Microsoft Vista EULA—that turn out to be outweighed by countervailing interests and yet cannot easily be undone.

As in the land and chattel servitude context, the problem of the future is exacerbated when restrictions run to remote and multiple generations of successors—increasing the prospect of unforeseeable impacts and the likely difficulties of identifying and locating the servitude beneficiaries with whom to renegotiate. Ironically, in the context of some especially restrictive licenses, the generational reach of the restrictions is reduced by the fact that transfer of the burdened resource is itself forbidden (a complete restraint on alienation that creates its own problem of the future—if the original owner no longer uses the resource but cannot transfer it to someone who would use it). Other licenses allow at least some transfers so long as the restrictions are passed along as well. For example, the Microsoft Vista EULA provides:

The first user of the software may make a one time transfer of the software, and this agreement, directly to a third party. The first user must uninstall the software before transferring it separately from the device. The first user may not retain any copies.

...

... Before any permitted transfer, the other party must agree that this agreement applies to the transfer and use of the software. The transfer must include the proof of license.³⁰⁴

By permitting transfer, this license mitigates the prospect that a copy of a program that has outlived its usefulness for one consumer will simply sit unused by anyone. But by requiring that obligations run to subsequent recipients, it

303. Julie Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151, 1178 (2007).

304. Vista EULA, *supra* note 212, § 16(a), (c).

extends the problem of the future in space and time.

The useful life of many software programs and other intellectual works is relatively short—which seems to reduce the prospect that anyone will care about, much less bemoan, old servitudes in this context. For example, Robinson observes that “[r]estrictions on the use or resale of Windows 95 became essentially obsolete soon after the release of Windows 98, and similar restrictions on the latter will not long survive now that Windows 98 has been replaced with, successively, Windows 2000 and Windows XP.”³⁰⁵ But the fact that Windows 95 has become commercially irrelevant to Microsoft and to most users does not mean that the limitations imposed by its EULA have no potential to hinder socially desirable activities. For example, computer science researchers and teachers may find it very valuable to dissect even outmoded software products. Long after license restrictions have become obsolete from Microsoft’s point of view, they may unjustifiably hinder this type of research—and yet transaction costs may make it difficult to renegotiate the terms.

Furthermore, some licensing practices may accelerate the problem of the future. Take, for example, the most famous software program licensed under the GPL—the operating system GNU-Linux. The original Linux kernel (the core of the operating system) was created in 1991 by Linus Torvalds, who licensed it under Version 2 of the GPL (GPL v.2).³⁰⁶ Subsequent versions of the kernel—which incorporate contributions from thousands of contributors—are therefore also licensed under GPL v.2. But some members of the free software community—notably Richard Stallman and his colleagues at the Free Software Foundation—think that the circa-1991 GPL v.2 is due for some improvements. In June 2007 the Free Software Foundation released GPL Version 3 (GPL v.3).³⁰⁷ But because the Linux kernel (as modified by thousands of contributors) is licensed under GPL terms that specify that modified versions must also be released under GPL v.2,³⁰⁸ it could not now be relicensed under GPL v.3 without permission from the owners of each copyrightable contribution.³⁰⁹ Such voluntary relicensing has been accomplished by some collaborative software projects (Mozilla, for example).³¹⁰ But in the case of Linux this would involve seeking permission from thousands (perhaps tens of thousands)³¹¹ of contributing users.³¹² Even if

305. Robinson, *supra* note 4, at 1489.

306. See Press Release, Free Software Found., FSF Releases the GNU General Public License, Version 3 (June 29, 2007), *available at* http://www.fsf.org/news/gplv3_launched (discussing the history and possible future licensing of the Linux kernel under GPL v.2).

307. *Id.*

308. See Posting of Linus Torvalds to <http://www.uwsg.iu.edu/hypermail/linux/kernel/0009.1/0096.html> (Sept. 8, 2000, 15:41:46 EST).

309. Individual contributions standing alone may be licensed more flexibly, however. See *id.*

310. See Mozilla Relicensing FAQ, <http://www.mozilla.org/MPL/relicensing-faq.html> (last visited Jan. 1, 2008). On the Mozilla Public License generally, see ROSEN, *supra* note 225, at ch. 7.

311. See WEBER, *supra* note 244, at 69.

312. See Christopher B. Browne, *Linux and Decentralized Development*, FIRST MONDAY, Mar. 1998, http://www.firstmonday.org/issues/issue3_3/browne/index.html (explaining that “since Linus Torvalds

they all agreed that switching to Version 3 was desirable, it seems quite unlikely that permission from everyone could be obtained.³¹³

Wikipedia is another prominent application that may be quickly encountering the problem of the future. When this well-known collaboratively edited online encyclopedia was first launched in 2001 it adopted a sibling of the GPL, the GNU Free Documentation License (FDL), which was originally created in 2000 as a license for software documentation. Wikipedia includes much more than software documentation, but the FDL seemed to Wikipedia's founders to be the best available license at the time.³¹⁴ In the intervening years, Creative Commons released licenses that some observers have suggested are more appropriate for short documents of the sort that make up Wikipedia. And Wikipedia founder Jimmy Wales recently said that "Wikipedia, had it been founded after Creative Commons, would have certainly been under a Creative Commons license, but it didn't exist at the time."³¹⁵ Other projects that have adopted the FDL for their projects have also regretted the choice.³¹⁶

Putting aside the question whether the FDL or Creative Commons license is a preferable instrument for managing the relationship between successive generations of Wikipedia contributors, it is clear that it would be extremely difficult at this point for Wikipedia to revisit its licensing choice.³¹⁷ The project now includes millions of entries, created and edited by more than 75,000 contributors³¹⁸ (many of whom contribute anonymously or pseudonymously),³¹⁹ and licensed under terms that require that future modifications all be licensed under

started accepting changes to Linux using the GNU Public License, nobody has had, or will have, sole control from a legal standpoint over the source code to Linux. In order to legally privatize the source code to Linux, thousands of contributors to Linux would need to agree to this. There are enough that are likely to disagree that this is extremely unlikely to happen"); *see also* Brian Proffitt, *Editor's Note: Who's Driving That Bus?*, *LINUX TODAY*, Oct. 13, 2006, <http://www.linuxtoday.com/news/2006101301826OPLL> (discussing the possibility of Linux relicensing).

Note that Torvalds apparently does not like GPL v.3, so the question may be moot in the case of Linux. *See, e.g.*, Sean Michael Kerner, *GPL Version 3 Hits the Home Stretch*, *INTERNET NEWS*, June 27, 2007, <http://www.internetnews.com/bus-news/article.php/3685801> (discussing Torvalds' opposition to GPL Version 3).

313. *See, e.g.*, ROSEN, *supra* note 225, at 252 (noting that, in large projects, "convincing everyone . . . to reconsider their licensing is very difficult").

314. *See* Jimmy Wales, Remarks at iCommons Party in San Francisco (Nov. 30, 2007) (video available at Silvain Zimmer, Jimmy Wales: Wikipedia Compatible with Creative Commons, <http://www.youtube.com/watch?v=TfY9aXZC7Q0>) (announcing Wikipedia licensing developments and history).

315. *Id.*

316. *See, e.g.*, Rowan Wilson, *OSS Watch Relicensing: The Case for Creative Commons*, *OSS WATCH*, Nov. 13, 2007, <http://www.oss-watch.ac.uk/resources/relicensing.xml>.

317. *But cf. infra*, notes 327–29 and accompanying text (discussing a complicated plan for making relicensing possible).

318. Wikipedia:About, <http://en.wikipedia.org/wiki/Wikipedia:About> (last visited Dec. 24, 2007).

319. Wikipedia:Contributing FAQ, http://en.wikipedia.org/wiki/Wikipedia:Contributing_FAQ#Do_I_have_to_use_my_real_name.3f (last visited Dec. 24, 2007).

FDL terms.³²⁰

There is clearly potential here for a problem of the future. One generation of creators has made choices about resource use that constrain their own future choices and those of subsequent generations of creators who participate in the project, under circumstances in which society might benefit from revisiting those choices.³²¹ In theory those choices could be reconsidered—the copyright holders could give permission. In reality, it may be impossible, or at least prohibitively costly, successfully to identify, locate, and bargain with all of the individuals who have contributed to Linux or to Wikipedia. Transaction costs, exacerbated by fragmented rights, could result in powerful dead-hand control.

This problem of the future is compounded by the proliferation and co-existence of multiple licenses that share the feature of insisting the derivatives of covered works must be licensed under the same terms. Both the GPL family of licenses and Creative Commons “share-alike” licenses raise the specter of license incompatibility by requiring that derivative works prepared by the licensee be licensed under the same terms as the licensed work. That means that derivatives based upon GPL-licensed software can only be licensed under the GPL; other licenses—including other licenses that similarly seek to promote the model of open and non-proprietary software development—are incompatible. As for Creative Commons, no two share-alike works can be combined into a new derivative work unless the terms of their respective licenses match. This causes incompatibility even within the Creative Commons system, which offers licensors the choice of two different (non-matching) share-alike licenses.³²² And there are many other non-Creative Commons licensing possibilities that are similarly incompatible with Creative Commons share-alike licenses.

License incompatibility has been a source of frustration for collaborative creators.³²³ For example, Wikipedia entries insist that derivatives be licensed under the FDL, but the collaborative travel guide Wikitravel collects entries that instead must be licensed under a Creative Commons license. The Wikitravel project acknowledges the disadvantages of this incompatibility: “The big downside of not using GFDL [GNU FDL] is that GFDL content—like Wikipedia articles—cannot be included in Wikitravel articles. This is a restriction of GFDL—you’re not allowed to change the license for the content, unless you’re

320. Wikipedia:About, http://en.wikipedia.org/wiki/Wikipedia:About#Trademarks_and_copyrights (last visited Dec. 24, 2007). Some Wikipedia contributors now license their original contributions under multiple licenses in order to give more flexibility to future generations. Wikipedia:Multi-Licensing, <http://en.wikipedia.org/wiki/Wikipedia:Multi-licensing> (last visited Dec. 24, 2007).

321. See ROSEN, *supra* note 225, at 106.

322. See Zachary Katz, *Pitfalls of Open Licensing: An Analysis of Creative Commons Licensing*, 46 IDEA 391 (2006).

323. See generally Michael Fitzgerald, *Copyleft Hits a Snag*, TECH. REV., Dec. 21, 2005, <http://www.technologyreview.com/Infotech/16073/page1/> (explaining how license incompatibility creates problems for sharing intellectual property).

the copyright holder. This is kind of a pain for contributors”³²⁴ Observing the Wikitravel situation, Niva Elkin-Koren observes:

Compatibility with other free licenses would allow authors, who released their works on one platform, to make their works available for reuse with content subject to another licensing scheme. Compatibility is thus crucial for facilitating collaboration and reuse. The proliferation of licenses increasingly creates a problem even within the relatively homogeneous open source community.³²⁵

The contributors who imposed these incompatible license choices on their works may in retrospect be happy to see their works combined. But the license restrictions they imposed—which have since become entangled with restrictions imposed by subsequent generations of contributors—may be extremely difficult to undo.

The Wikimedia Foundation, which operates Wikipedia,³²⁶ has been attentive to this problem. In late 2007 the Wikimedia Foundation board of directors passed a resolution recognizing “community concerns about issues of compatibility between the GNU Free Documentation License and [the Creative Commons Attribution-ShareAlike license]” and resolving that “[t]he Foundation requests that the GNU Free Documentation License be modified . . . to allow migration by mass collaborative projects to the [Creative Commons Attribution-ShareAlike license].”³²⁷

The idea here appears to be that because the version of the FDL that applies to Wikipedia entries allows works licensed under it to be copied and modified so long as those copies and modifications are licensed under “the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation,”³²⁸ a revised FDL could be drafted in a way that would solve the incompatibility problem by expressly providing that works may be copied and modified so long as those copies and modifications are licensed under the FDL *or* specified compatible licenses. Wikipedia entries could then be relicensed under the revised FDL, which would in turn allow them to be relicensed under the specified compatible licenses (and thus combined with works that required that derivatives be licensed under those specified licenses).

324. Wikitravel: Why Wikitravel Isn't GFDL, http://wikitravel.org/en/Wikitravel:Why_Wikitravel_isn't_GFDL (last visited Jan. 1, 2008).

325. Elkin-Koren, *supra* note 9, at 413–14; *see also* Katz, *supra* note 322, at 391 (concluding that “incompatibilities between certain Creative Commons licenses may limit the future production and distribution of creative works in ways that today’s creators may not intend”). On license compatibility, *see* ROSEN, *supra* note 225, at 246–47, 252.

326. *See* Wikimedia Foundation, http://en.wikipedia.org/wiki/Wikimedia_Foundation (last visited Dec. 28, 2007).

327. Wikimedia Foundation, Resolution:License Update, http://wikimediafoundation.org/wiki/Resolution:License_update (last visited Dec. 28, 2007).

328. Wikipedia, Wikipedia:Copyrights, <http://en.wikipedia.org/wiki/Wikipedia:Copyrights> (last visited Dec. 28, 2007).

This plan may eventually resolve at least a subset of the incompatibility problems posed by Wikipedia licensing. But the plan's convolution and the lengthy negotiations that it apparently required highlight the general problem of license proliferation and incompatibility.³²⁹

Incompatibility can be a problem in the context of tangible property too—imagine adjacent parcels governed by different servitudes requiring their use for specific conservation purposes. It might make sense to combine all of the parcels into a large bird sanctuary, but it turns out that one is designated as a camping area, the next as a farm, et cetera, and it is hard to consolidate them all for a larger and perhaps better purpose. But there are natural constraints on the magnitude of the incompatibility problem in real space. One parcel of land can only be adjacent to so many other parcels. This is not so for intangible property, and so incompatibility is a problem that seems to loom larger in the realm of the new servitudes than in the context of running restrictions on tangible resources.

On the other hand, recall that the running restrictions imposed by the GPL, FDL, and Creative Commons licenses are merely conditions imposed on behavior that would otherwise be forbidden by copyright law. Copyright law itself reaches far into the future, controlling how people may use creative works they have acquired, and often dividing rights among many separate contributors.³³⁰ Even without the restrictions and complexity introduced by incompatible licenses, someone who wants to combine existing copyrighted works into a new derivative cannot proceed without the permission of all the relevant copyright holders. Where a work is governed by a relatively permissive license, like the GPL or a Creative Commons license, this collaborative creator has to negotiate with copyright holders only if he wants to avoid the terms of the license. License incompatibility can create a compelling case in which renegotiation seems both desirable and difficult; but the problem in theory seems less severe than the problem posed by copyright law itself. In practice, however, the phenomenon of a single creative work with thousands of copyright holders might not arise outside of these new licensing contexts. It is the open and accessible nature of FDL-, GPL- and Creative Commons-licensed works that makes them amenable to collaboration by many independent individuals, and which creates the risk of an intractable thicket if incompatibilities between those licenses ultimately thwart future collaboration.

The paradigmatic licensing practices just examined illustrate a variety of

329. When Jimmy Wales announced the plan, he explained that it was the result of “a long process of negotiation with the Free Software Foundation—many, many different conversations. It’s very complicated, with lots of legal ramifications . . .” Wales, *supra* note 314.

330. This fragmentation of rights occurs, for example, when a copyright holder authorizes preparation of a derivative work. The resulting work cannot be copied without permission from both the original copyright holder and the owner of the subsequent contributions. See 17 U.S.C. § 103 (2000). Copyright does have some doctrines that consolidate rights, however, including the work-for-hire doctrine. See *id.* § 101 (defining “work made for hire”); *id.* § 201(b) (providing ownership rules for works made for hire).

different ways in which new servitudes might raise the problem of the future. The licenses all feature the remoteness and durability that contribute to the problem of the future in the land and chattel contexts. And although the assets to which they attach may often have a shorter useful life than land or even some chattels, unforeseeable consequences can arise quickly in a context characterized by creative serendipity and rapid technological change. The problem of the future seems at first glance most serious when running restrictions cut back on privileges that users would otherwise retain under the background law of intellectual property. Creative Commons licenses and the GPL, by contrast, leave the users of the future as free tomorrow as they would be today under copyright law. On the other hand, the web of overlapping and inconsistent obligations that can be spun in the collaborative environment fostered by these licenses may create problems of the future that would be unlikely to arise in practice even under the more restrictive terms of copyright law.

D. EXTERNALITIES

Even where notice is effective and people who acquire burdened assets are able to anticipate and internalize future difficulties that restrictions could impose on them and their successors, servitudes are problematic where they cause harm to third parties. Concern with third-party effects helps to explain the special judicial skepticism triggered by land and chattel servitudes that restrain competition (thus harming competitors and consumers) and by servitudes that impose discriminatory restrictions (thus harming the targets of that discrimination).³³¹

In the context of servitudes attached to intangible works of invention and authorship and the media that embody them, third-party harm could arise from the enforcement of restrictions that effectively waive public-regarding limitations built into intellectual property law. For example, on one view of fair use under copyright law, the doctrine aims to ensure publicly beneficial reuse of copyrighted works—use that (precisely because it benefits society beyond the immediate user of the copyrighted works) might not result from voluntary transactions. Wendy Gordon gives an example:

As an example of how market failure illuminates an aspect of traditional fair use law, consider the preference the fair use doctrine shows for the educational user. From an economic perspective, the preference can be explained in part by the significant benefits the educator generates without receiving proportional reward: that is, the “positive externalities” he generates. A person who is able to generate significant external benefits in this way may be capable of producing a value-maximizing use of a copyrighted work, yet not have enough funds to let him purchase a license for engaging in the use. A court interested in allowing the socially beneficial use to go forward may

331. See discussion *supra* sections I.D., II.D.

allow a liberty outside the market. The doctrinal name for the liberty is “fair use.”³³²

A fair-use doctrine that aims in part to grant liberty to uses of copyrighted works that generate positive externalities of this kind could easily be short-circuited by enforcement even of simple and entirely voluntary bilateral contracts waiving fair use. The compensation a user gets for agreeing to forgo uses of a copyrighted work that copyright law otherwise privileges (in the form of physical access to the work, perhaps at a discounted price or under other attractive circumstances) may be enough to satisfy her but not enough to compensate society for the forgone benefits it might have received had she instead found a way to exercise her fair use rights.

The problem of external harms (or, at least, foregone external benefits) is compounded where the waiver of fair use and other public-regarding limitations on intellectual property rights is effected via a license that runs to remote users of the work. As with notice and the problem of the future, the servitude-like features of remoteness and durability magnify the externality problems caused by restrictive licenses by making them more widespread in space and time. And the way in which the restrictions can be bundled ubiquitously with access to unique copyrighted works for which there are only imperfect market substitutes makes them difficult even for skeptical licensees to escape.

Despite this threat of third-party harm, courts have concluded that fair use may be waived via click-wrap or shrink-wrap licenses. For example, several courts have enforced software licenses that (like the Microsoft EULA described above) prohibit reverse engineering of software³³³ despite the fact that reverse engineering for purposes of developing non-infringing products that interoperate with existing software or hardware is a reasonably well-established example of privileged fair use that can generate socially beneficial competition.³³⁴

Users of software and other intangible works also generate third-party benefits by disseminating information about those works in the form of criticism or other types of commentary. Of course, criticism and commentary that does not copy the targeted work does not fall within the exclusive rights of copyright at all.³³⁵ And criticism and commentary that does involve some copying is a

332. Wendy J. Gordon, *Market Failure and Intellectual Property: A Response to Professor Lunney*, 82 B.U. L. REV. 1031, 1032–33 (2002); *see also* Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 82 COLUM. L. REV. 1600, 1630–32 (1982); Lydia Pallas Loren, *Redefining the Market Failure Approach to Fair Use in an Era of Copyright Permission Systems*, 5 J. INTELL. PROP. L. 1, 49–53 (1997).

333. *See, e.g.*, *Davidson & Assocs. v. Jung*, 422 F.3d 630, 639 (8th Cir. 2005); *Bowers v. Baystate Techs., Inc.*, 320 F.3d 1317, 1325–36 (Fed. Cir. 2003); *see also* Stewart E. Sterk, *Intellectualizing Property: The Tenuous Connections Between Land and Copyright*, 83 WASH. U. L.Q. 417, 466–67 (2005).

334. *See, e.g.*, *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1520–28 (9th Cir. 1992).

335. *See* 17 U.S.C. § 106 (2000 & Supp. II 2002) (listing exclusive rights of copyright holders).

classic example of public-regarding fair use.³³⁶ But, like reverse engineering, these socially beneficial activities have been the target of license restrictions. Lydia Loren has documented that “[c]ompanies increasingly attempt to prohibit review or criticism of their products or even criticism of the companies themselves through these contracts. Other contracts seek to prohibit the disclosure of any product or benchmark testing done on the products, or any reviews of the product whatsoever.”³³⁷ Consider, for example, the terms that Network Associates originally attached to its popular McAfee antivirus software: “The customer shall not disclose the result of any benchmark test to any third party without Network Associate’s prior written approval.”³³⁸ And “[t]he customer will not publish reviews of this product without prior consent from Network Associates, Inc.”³³⁹ Microsoft has similarly included anti-disparagement clauses in some of its product licenses,³⁴⁰ as has the Walt Disney Company.³⁴¹

These license provisions limiting criticism and commentary about licensed works may benefit licensors, and may even be initially acceptable to licensees. But society bears the ill-effects of staying uninformed about the bugs and shortcomings of muzzled products. Because the restrictions purport to apply to anyone who uses the burdened works, their third-party harms can be wide-ranging, durable, and thus especially powerful.

With regard to this type of third-party harm, there is a stark distinction between these running restrictions that go beyond what intellectual property law would otherwise restrict and those that effect a conditional waiver of intellectual property’s prohibitions. Neither the GPL nor Creative Commons licenses extract waivers of fair-use rights or of any other limitation on copyright. Instead, they remove copyright’s restrictions under specified circum-

336. *See id.* § 107 (2000) (identifying “criticism” and “comment” as potential fair uses).

337. Lydia Pallas Loren, *Slaying the Leather-Winged Demons in the Night: Reforming Copyright Owner Contracting with Clickwrap Misuse*, 30 OHIO N.U. L. REV. 495, 497 (2004); *see also* Lemley, *supra* note 226, at 469 n.36.

338. *People v. Network Assocs., Inc.*, 758 N.Y.S.2d 466, 467 (Sup. Ct. 2003).

339. *Id.* The court enjoined the use of this language on the narrow ground that the way in which it was presented may have misled customers.

This language implies that limitations on the publication of reviews do not reflect the policy of Network Associates, but result from some binding law or other rules and regulations imposed by an entity other than Network Associates. Thus, the Attorney General has made a showing that the language at issue may be deceptive, and as such, the language is not merely unenforceable, but warrants an injunction and the imposition of civil sanctions . . .

Id. at 470.

340. *E.g.*, MICROSOFT AGENT LICENSE AND DISTRIBUTION AGREEMENT, <http://www.microsoft.com/msagent/licensing/DistLicenseV2.aspx> (“If you use any of the Character Animation Data and Image Files, you agree to . . . not use the Character Animation Data and Image Files to disparage Microsoft . . .”); *see also* Elizabeth I. Winston, *Why Sell What You Can License? Contracting Around Statutory Protection of Intellectual Property*, 14 GEO. MASON L. REV. 93, 110–11 (2006) (describing how “both Microsoft and Network Associates have attempted to use licenses to prevent criticism of copyrighted works by licensees”).

341. *See, e.g.*, *Video Pipeline, Inc. v. Buena Vista Home Entm’t, Inc.*, 342 F.3d 191, 203 (3d Cir. 2003).

stances. By facilitating waiver of those restrictions that individual copyright holders do not value, these licenses allow reuse of copyrighted works in some of the very cases in which the benefits from reuse (including benefits that accrue to the public at large) outweigh the benefits of any incentive effect that would come from full enforcement of all of copyright's limitations. Positive externalities thus help to justify these license mechanisms and to highlight the importance of addressing the issues of license incompatibility and confusion that may limit their usefulness.

In sum, the extent to which contemporary licenses applied to intangible works impose external costs is heavily dependant on the specific substantive terms of those licenses. Where licenses do impose external harms—by, for example, inducing the waiver of the public-regarding limitations within copyright law—those harms are exacerbated by the servitude-like qualities of remoteness, durability, and ubiquity that spread harmful impacts over time and space. Where, by contrast, licenses waive some of the unnecessary limitations on reuse that copyright law itself imposes against the world, the power of the servitude mechanism might in fact magnify beneficial positive externalities.

CONCLUSION: OLD LESSONS FOR THE NEW SERVITUDES

I have traced the jurisprudence of servitudes on land and personal property in order to develop a full account of the problems that have animated the limiting doctrines applied to those servitudes. In so doing, I have identified three constellations of concerns: those related to notice and information costs, those related to dead-hand control and other aspects of the “problem of the future,” and those related to harmful externalities. These concerns arise from specific characteristics of servitudes including: the remote relationship between the burdened and benefited parties, the durability and ubiquity of the restrictions imposed, the fragmentation of rights to control use of a single resource, the potential lack of salience to purchasers, and the insulation from effective competition where servitudes are attached to goods with unique qualities or are ubiquitous across entire markets. But different servitudes exhibit these features to different degrees, different servitudes are amenable to different mechanisms for resolving the problems I identify, and some servitudes, but not others, are entangled with intellectual property rights in ways that complicate the standard servitude analysis. All of this variation helps to explain the intricacies of the doctrinal rules that enforce some servitudes but not others.

I use this account of servitude jurisprudence and its animating concerns to assess contemporary licensing practices in the context of software and other intangible works. I find that some of the concerns that have animated skepticism about servitudes on land and personal property may in fact be more relevant to contemporary licensing practices than they are in the contexts in which they originally arose. But the new servitudes differ from each other in respects that are critical to the applicability of the servitude analysis: each of the paradigmatic licenses that I have examined exhibits a different mix of problematically

servitude-like features.

The Microsoft EULA purports to impose restrictions beyond the background restrictions of copyright law on multiple generations of remote consumers by attaching itself ubiquitously to works of authorship for which there is limited effective competition. It thus raises nearly all of the concerns traditionally associated with servitudes—potentially confusing consumers for whom its restrictions are not initially salient and impinging on future creativity and innovation by imposing restrictions that threaten the positive externalities preserved by copyright's public-regarding limitations.

The GPL and Creative Commons licenses are fundamentally different in that they arguably impose conditions that are merely a subset of those restrictions already imposed by the background law of copyright—a characteristic that mitigates both notice and externality problems. Indeed, by releasing creative works from unnecessary copyright restrictions, these licenses promise to generate positive spillovers from collaborative creativity. But, ironically, this environment of collaborative creativity can result in complex webs of overlapping and potentially incompatible conditions, causing unanticipated future problems that may even transcend the problems that necessarily arise as a consequence of copyright law's own running restrictions and long duration.

The lessons I have drawn from the old servitudes thus bring the problems—and also the promise—of these new servitudes into sharp focus, providing a new framework within which to analyze emerging electronic commerce practices while contributing doctrinally and historically grounded insights into the ongoing debate about the proper relationship between intellectual property and the public domain. In future work I will use the taxonomy of servitude-like characteristics and concerns developed here to evaluate the existing policy levers that are available to respond to the problems raised to various degrees by the new servitudes. In many cases the available doctrines (which include preemption, exhaustion, misuse, and unconscionability) may not in fact take into account all of the problematically servitude-like features that I have identified; they may, therefore, fail in some cases adequately to address the problems of notice, dead-hand control of the future, and externalities that have motivated servitude skepticism. New mechanisms—judicial, regulatory, and voluntary—might offer alternative ways to address these problems. Just as the framework I have distilled from the old servitudes has illuminated the challenges posed by the new servitudes, it will usefully inform analysis of potential solutions.