

Give Us Back Our Tragedy: Nonrivalry in Intellectual Property Law and Policy

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Information goods form the most distinct category of nonrival resources in regard to which one person's ability to use the resource is not lessened by another person's use. Nonrival goods are not subject to the tragedy of the commons and as a result the most common modern justification for property rights is absent in regard to them. Therefore intellectual property rights, unlike many other property rights, may perform a beneficial function only with respect to the dynamic incentive to produce information goods. With respect to static use of existing information, intellectual property rights serve no beneficial function and always have a negative effect. This fundamental and ostensibly well-understood element of intellectual property theory has important implications for the policy analysis of intellectual property rights compared to other institutional alternatives (including a commons) and for the design of such rights. Because it poses a fundamental challenge to the idea of a uniform theory of property, the assumption of nonrivalry of information has been subjected to attacks by scholars who sought to introduce the tragedy of the commons to this realm and reintegrate intellectual property rights into standard property analysis. Other scholarship rejects the attacks on nonrivalry but often obscures the full implications of this feature of information goods.

* This article has benefited greatly from the ideas and insight of Talha Syed. To the extent that it has any merit, much of it is attributable to him. Errors and omissions are solely mine. For very useful comments I would also like to thank Bob Bone, Eric Claeys, John Golden, Wendy Gordon, Mark Lemley, Sean Pager, David Schorr, Stewart Sterk and participants of the conference *The Tragedy of the Commons at 50: Context, Precedents, and Afterlife* held at Tel Aviv University Buchmann Faculty of Law.

Cite as: Oren Bracha, *Give us back our Tragedy: Nonrivalry In Intellectual Property Law and Policy*, 19 THEORETICAL INQUIRIES L. 633 (2018).

This article explains the centrality of nonrivalry in the policy analysis of information goods and the challenge it poses to a unified theory built on the concept of the tragedy of the commons. It explains the unfortunate tendency to obscure the full implications of nonrivalry, explores the various attempts to restore a tragedy of the commons framework to the analysis of information goods, and exposes the flaws of these arguments. The article concludes by explaining the implications of the nonrivalry of information goods for a properly understood general theory of property built around the salient positive and normative features of resources.

INTRODUCTION

Long before Garrett Hardin and his modern fellow-tragedians, a wise American wrote the following words:

If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property.¹

In this passage from an 1813 letter, Thomas Jefferson wove together two distinct arguments. The one was a traditional objection to the notion of property in ideas couched in terms of natural property rights. In the thinking of the time, natural property rights were strongly associated not only with labor but also with a “natural” immediate connection between the owner and the

1 Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS JEFFERSON 326.

owned object of property. This connection was often described as exclusive occupancy that was typically associated with physical possession.² Claims of natural property rights in ideas were often resisted with the objection that intangible ideas, at least once communicated to the public, were no longer subject to this exclusive control relationship that is the “natural” core of property.³ By the time of Jefferson’s letter this was not news. Variants of this objection and rejoinders to them had been circulating for at least a century. They had been deployed by opposing parties in the eighteenth century British literary property debate in which the new idea of intellectual property (IP) was subjected to close philosophical scrutiny.⁴

Intertwined with this already familiar objection to IP was also a very different argument, one that is distinctly modern. Inventions are unsuitable for property, Jefferson asserted, because like light from a taper, one could use them and enjoy their fruits without lessening the ability of others to do so. Jefferson, in other words, pinpoints here a central feature of intellectual goods, referred to by modern economists as nonrivalry.⁵ A resource is nonrival to the extent that one person’s ability to use or “consume” it does not lessen the ability of others to do so.⁶ Information goods form the most distinctive category of nonrival resources. And it is this quality of information goods that stands at the very heart of the positive and normative analysis of property in them.

2 See, e.g., WILLIAM WARBURTON, A LETTER FROM AN AUTHOR TO A MEMBER OF PARLIAMENT CONCERNING LITERARY PROPERTY (London, J & P Knapton, 1747), reprinted in HORACE WALPOLE’S POLITICAL TRACTS 1747-1748, 6 (Stephen Parks ed., 1974) (“Things Susceptible of Property must have these two essential Conditions; that they may be useful to Mankind; and that they be capable of having their Possession *ascertained*”).

3 See, e.g., *Millar v. Taylor* (1769) 98 Eng. Rep 201, 234 (Yates J., dissenting) (“when an author prints and publishes his work, he lays it entirely open to the public, as much as when an owner of a piece of land lays it open into the highway”).

4 See BRAD SHERMAN & LIONEL BENTLY, THE MAKING OF MODERN INTELLECTUAL PROPERTY LAW: THE BRITISH EXPERIENCE, 1760-1911, at 11-42 (1999).

5 Indeed, in this passage Jefferson can be taken to specify both “public goods” features of intellectual goods: nonrivalry and — in connection with the first argument concerning ease of physical control or possession — nonexcludability. For a description of public goods as being marked by these two features, see *infra* text accompanying notes 17-19.

6 RICHARD CORNES & TODD SANDLER, THE THEORY OF EXTERNALITIES, PUBLIC GOODS, AND CLUB GOODS 6 (1996).

Enter the tragedy of the commons.⁷ Hardin's analysis of how the dynamics of use of resources open to all leads to the depletion of these resources is the most influential modern justification for property rights.⁸ The source of the malady identified by Hardin is unchecked individual use of a resource that imposes negative externalities on use by others. The remedy is property. Yet information goods are nonrival, which means that a use by one person does not impose negative use externalities on others. No rivalry, no tragedy. Hence, for ideas the major *raison d'être* of property rights is absent. In fact, inasmuch as static use of resources is concerned, property becomes a pure negative.⁹ By converting a resource open to all into one that is partially excludable, property places costly use restrictions for, from a static point of view, no beneficial reason whatsoever. In Jefferson's terms, property lessens the ability of others to light their taper from mine without darkening me. And the patch applied to fix this use restriction problem — market transfers — is never costless and therefore is always partial.

Property may, of course, still play an important role in regard to the dynamic production of nonrival information goods. By empowering the owner to exclude others and charge them for use, it may enable her to internalize enough of the value of a resource to cover its production cost. Where the inability to exclude others may prevent the producer from recouping enough of the creation cost to justify production, property plays an important role. It is crucial, however, that this useful role applies only to dynamic production incentives. In regard

7 Garret Hardin, *The Tragedy of the Commons*, 162 *SCI.* 1243 (1968).

8 GREGORY S. ALEXANDER & EDUARDO M. PEÑALVER, *AN INTRODUCTION TO PROPERTY THEORY* 19 (2012).

9 Economic analysis of resources assumes an analytic distinction between static and dynamic perspectives. A static perspective postulates that a particular resource already exists and inquires into the effect of legal rules on the use of this resource. A dynamic perspective analyzes the effect of legal rules on incentives to produce the resource in the first place. Consider, for example, a loaf of bread. A static perspective assumes that the bread is already in existence (like manna from the sky) and analyzes what legal rules would best serve a given normative goal in regard to the use of this bread. A dynamic perspective analyzes, in light of a normative goal, how legal rules would affect the incentive to produce the bread and the interaction related to this production process. Saying that from a static perspective property is a pure negative in relation to information goods means that taking the existence of the information good as a given, property rights play no positive role and have some negative effect in regard to the use of the good. This still leaves open, of course, the possibility that property rights play a positive role from a dynamic perspective, i.e., by supplying incentives to produce information goods.

to static use of nonrival information goods, property remains a pure negative. This built-in conflict between their functions means that the analysis and evaluation of property rights in information is fundamentally different from the case of rival resources subject to Hardin's tragedy. Whether or not IP rights are "really" property rights, Jefferson had a point when he observed that information is the thing "less susceptible than all others of exclusive property."

Put differently, IP is a thorn in the side of any attempt to present neoclassical economic thinking as providing a uniform, comprehensive support for strong property rights based on tragedy of the commons logic. It is little wonder, then, that for decades IP has been subjected to a concentrated effort to reintegrate it into the general theory of property. This effort has taken the form of a direct attack on the source of the "trouble": the nonrivalry of information goods. If only some way could be devised to demonstrate that information is rival after all, the tragedy could be restored and with it standard property analysis. This effort has taken many forms in the hands of various IP maximalists. The strongest testament to its success, however, is the effect it has had on scholarship more skeptical of IP. IP skeptics typically reject the maximalist theories of IP rights. Yet only too often they succumb to the driving force behind these theories by obscuring or even ignoring the implications of nonrivalry, which is both the source of the challenge of IP to property theory and the ultimate target of maximalists.

It is important to emphasize one clarification at the outset. I do not claim here that property is not the preferable policy choice in any particular case of information goods. Any conclusion on that front could be established only by comparative institutional analysis of the various alternative policy choices for addressing the dynamic production of information goods, including that of doing nothing in a particular context. I do claim, however, that generally speaking there is no static justification of property in information goods as a mechanism for controlling use. And a lot follows from that. One implication is that the case for property in a nonrival information good is much weaker by comparison to rival goods. This is so because unlike rival resources where property serves both a static and a dynamic purpose, with regard to information goods only the latter applies, while on the static side of access and use of existing resources property is a pure negative. It follows that justifying IP involves a particularly high burden, which includes close examination of three inquires: asking whether any institutional mechanism is justified on balance; a close comparison of alternative institutional solutions to the incentive problem, particularly those that do not involve exclusion; and even when property is the preferred option, a close tailoring of the right's features to its ambivalent effects. More generally, information goods pose a fundamental challenge to any ambition of a monolithic theory of property. Once one fully understands

how the nonrivalry of such goods fundamentally changes the policy analysis of property in them, the door is opened for a theory of property that takes seriously the salient positive and normative features of different resources. In this sense, IP has something to teach us about property theory.

This article starts with the far-reaching implications of nonrivalry of information goods in Part I. I explain how nonrivalry dissolves the tragedy of the commons and how by doing so it poses a challenge for a property theory unified around that idea. Part II then examines how IP skeptics tend to obscure and dilute the implications of nonrivalry. Next, the ongoing efforts of IP maximalists to bring back the tragedy are analyzed in Part III. These have taken three main forms, all aimed at attacking the assumption of nonrivalry in use of information, thereby reintegrating IP into “standard” property theory. I examine these theoretical efforts and find that they have been unsuccessful. The flaws of the three strands of new-tragedy arguments are of two kinds. Upon close examination, it turns out that two of these arguments are simply wearing a false tragedy disguise: they are not about rivalry in use at all, and as a result their prescription of familiar remedies to this problem is misguided. The third argument is indeed about rivalry, but it suffers from grave empirical and normative difficulties. I conclude by briefly examining the broader implications of nonrivalry for IP and general property theory.

I. TRAGEDY, RIVALRY AND PROPERTY

Property rights are a method of governing the use of resources. Though it may be a decentralized method for making decisions about the allocation and use of resources, governance it is.¹⁰ But why is governance of the use

10 I use the term “governance” to emphasize that property is a method for making decisions about the use of resources that are coercively imposed on others through the enforcement power of the state. See Morris Cohen, *Property and Sovereignty*, 13 CORNELL L.Q. 8 (1927). The term is used in a very different way in recent property scholarship. Henry Smith in an influential article distinguished between governance and exclusion as two different strategies for making decisions about resources marked by their level of granularity. Exclusion confers on an owner a broad right to exclude others from a sweeping array of uses and delegates to the owner the power to achieve further individuation through bargaining. A governance strategy directly allocates different uses of the resources to multiple individuals on a much more granular level. See Henry E. Smith, *Exclusion Versus Governance: Two Strategies for Delineating Property Rights*, 31 J. LEGAL STUD. S453, S454–55 (2002). The distinction is based only on the level of delineation of entitlements. It does not categorically exclude the governance strategy from

of resources necessary at all? The modern answer is Hardin's tragedy of the commons.¹¹ The tragedy is the wasteful dynamics that arguably follows when resources are held in common, meaning when they are open to anyone's use

property or deny that property rights are underwritten by state power. Property, however, is strongly identified with exclusion and disassociated from governance when it is asserted that "the core of property is the . . . right of an owner to exclude the world from the resource," and when governance arrangements are described as peripheral "refinements outside the core of property." See Thomas W. Merrill & Henry E. Smith, *The Morality of Property*, 48 WM. & MARY L. REV. 1849, 1857, 1891 (2007); Henry Smith, *Mind the Gap: The Indirect Relation Between Ends and Means in American Property Law*, 94 CORNELL L. REV. 959, 964-65 (2009) [hereinafter: Smith, *Mind the Gap*]. Notwithstanding the recognition of the role of state power in the exclusion strategy, it is also common in this literature to associate governance with "regulation" or observe that governance strategies more "intensively regulate" resource uses. See Smith, *Mind the Gap*, at 982; Adam Mossoff, *The False Promise of the Right to Exclude*, 8 ECON. J. WATCH 255, 258 (2011). Another group of writers uses the exclusion/governance distinction somewhat differently. Exclusion is associated here with the "external" dimension of the owner's right to exclude others not recognized as having any stake in the resource, and governance denotes the "internal" dimension pertaining to the rules governing and structuring the relationship between multiple insiders who are stakeholders in the resource. See Gregory S. Alexander, *Governance Property*, 160 U. PA. L. REV. 1853, 1855-56 (2012); Hanoah Dagan, *Inside Property*, 63 U. TORONTO L. REV. 1, 2 (2013). These writers argue that governance in this sense is an integral and central part of property. I use the term governance in a different way from both of those common usages. As used here, governance includes any system for making decisions about the allocation and use of resources backed by the coercive power of the state. This encompasses both broad rights to exclude and more granular entitlements to various individuals, as well as both the "external" and "internal" dimension of property rights. I use the term in this way precisely to avoid the trend in mainstream property theory of depicting a core of property which, while not free from state power, is somehow less coercive or "regulatory." This is not to deny that the property strategy of governance is different in important ways from other strategies, mostly for reasons attributable to its decentralized character and related informational implications.

- 11 See Hardin, *supra* note 7. It is well recognized today that Hardin was preceded by economists who made similar arguments considerably earlier. See also Stuart Banner, *The Banality of the Commons: Efficiency Arguments Against Common Ownership Before Hardin*, 19 THEORETICAL INQUIRIES L. 395 (2018). See, e.g., Frank H. Knight, *Some Fallacies in the Interpretation of Social Cost*, 38 Q.J. ECON. 582 (1924); Howard S. Gordon, *The Economic Theory of a Common Property Resource: the Fishery*, 62 J. POL. ECON. 124 (1954).

with no restriction. It follows from three propositions: (a) individuals behave “rationally” to maximize their own self-interest; (b) a use by one person of a resource has negative effects on the ability of others to use it; and (c) individuals internalize the entire benefit of their use but only a small fraction of its negative effect. The result: while each individual acts rationally to maximize his own interest, collectively resources are used wastefully and might even be depleted. The typical examples are open pastures that are destroyed by overgrazing or depleted open fisheries. In Hardin’s words, “Freedom in the commons brings ruin to all.”¹² To prevent “ruin to all,” some system of governance is required, a method for restricting and allocating the use of resources.

For Hardin, there were two alternative systems of governance: property and regulation. Elinor Ostrom famously added a third possibility: a managed commons, meaning a resource that is formally open to all members of a specific community whose use by members of the community is governed by informal social norms.¹³ These are three different methods for governance of the use of resources with different relative virtues and drawbacks, but governance they are. And it has been widely accepted that some method of governance is necessary to avert the danger of ruin for all in the use of resources. The debate has been on the preferable mechanism, and many champion property rights as the best alternative in many contexts, primarily for reasons pertaining to their decentralized character.¹⁴

What happens, however, when the resource at issue is nonrival in use? A resource is nonrival to the extent that its consumption or use does not lessen the ability of others to engage in similar consumption or use.¹⁵ Rivalry is a scale rather than binary state. Different resources have different degrees of rivalry in regard to various uses. Nonrival resources are close to the end of the spectrum where one person’s consumption does not degrade that of others in regard to a broad swath of uses. With respect to such a resource, there is no tragedy of the commons.¹⁶ Proposition (b) in the basic tragedy argument does

12 Hardin, *supra* note 7, at 1244.

13 ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990). As Yochai Benkler points out, Ostrom’s focus was on common property regimes under which group members have property rights to exclude others and only common use by group members is governed by informal social norms. See Yochai Benkler, *Open Access and Information Commons*, in 2 OXFORD HANDBOOK OF LAW AND ECONOMICS: PRIVATE AND COMMERCIAL LAW 256, 259 (Francesco Parisi ed., 2017).

14 *Id.* at 258.

15 See Cornes & Sandler, *supra* note 6, at 6.

16 See Julie E. Cohen, *Lochner in Cyberspace: The New Economic Orthodoxy of “Rights Management,”* 97 MICH. L. REV. 462, 502 (1998); Carol M. Rose, *The*

not hold because one person's use does not have a negative effect on others' ability to engage in the same use. And with the proposition falls the conclusion: a nonrival resource used in common does not lead to ruin for all. No rivalry, no tragedy. The dynamics that leads to waste and depletion of rival resources is simply absent. When the tragedy disappears, so does the justification for a system of governance of any kind for allocating and restricting the static use of the relevant resource. No rivalry, no tragedy, no governance. Furthermore, under such conditions governance is not only superfluous, from the point of view of static allocation it is an affirmative burden. Any system of governing the use of resources will have some imperfections by preventing uses that should be allowed and will entail some administrative cost. When the system is unnecessary, the imperfection in allocating use and the administrative cost become a net negative with no countervailing benefit.

Information goods are the paradigmatic case of nonrivalry in use. Many of them are strongly nonrival with regard to many of their uses. The tragedy of the commons is irrelevant for analyzing the use of such resources, and a system of use governance is unnecessary and harmful on balance. All of which is not to say, of course, that there are no policy concerns left in regard to these resources for which property could serve as a possible solution. The fundamental point is that any remaining concerns do not pertain to the static use of resources once they exist, but only to the dynamic aspect of their production and development. With respect to information goods, the main production problem stems from two typical features of these resources: their non-excludability and the gap between their development and reproduction cost.¹⁷ A resource is non-excludable to the extent that it is difficult to use the resource while denying use to others.¹⁸ This feature, together with the fact that typically the cost of producing an information good is much higher than copying it, means that producers may face difficulties in recouping their production cost. If producers anticipate this, the resource may never

Public Domain: Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age, 66 L. & CONTEMP. PROBS. 89, 90 (2003); Mark Lemley, *Property, Intellectual Property and Free Riding*, 83 TEX. L. REV. 1031, 1050-51 (2005); Stewart E. Sterk, *Intellectualizing Property: The Tenuous Connections Between Land and Copyright*, 83 WASH. U.L.Q. 417, 435 (2005); Alexander & Peñalver, *supra* note 8, at 26.

17 Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609, 615 (Nat'l Bureau of Econ. Research ed., 1962); Mark Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 994-95 (1997).

18 See Cornes & Sandler, *supra* note 6, at 6.

be produced and society will be deprived of its use value. What is required to solve this problem is not a mechanism for governance of use, but one for inducement of production. And here, too, property rights are one of the available mechanisms. Property's legal power to exclude others can allow a producer to charge users of the good a higher price, thereby enabling him to recoup and inducing him to produce.¹⁹

This is the standard analysis of intellectual property as a solution to an appropriability problem pertaining to public goods.²⁰ For our purposes, however, it is crucial to emphasize the problematic character of the property solution. In the absence of a tragedy of the commons, the incentive to produce function is the only benefit of property. From a static use point of view, exclusion of users is a pure negative. Governance as such remains a bug rather than a feature. Three important implications follow. First, in intellectual property there is a very high threshold posed by the question of whether any institutional intervention is justified at all. Because only the incentive to produce stands on the positive side, one must seriously inquire whether the gains from the method chosen will outweigh the costs, especially in light of alternative routes for producers to internalize some of the value of their creation, such as first mover advantages, reputational benefits, or pre-commitment by users.²¹ Second, comparative analysis of the institutional alternatives becomes doubly important. This is particularly so because, unlike property, other institutional solutions can decouple the beneficial inducement to produce function from the unnecessary and costly governance function.²² Third, even if property

19 Lemley, *supra* note 16, at 995-96.

20 Public goods are defined as goods that are nonrival and non-excludable. *See, e.g.*, Thomas E. Borchering, *Competition, Exclusion, and the Optimal Supply of Public Goods*, 21 J.L. & ECON. 111 (1978); J.G. Head, *Public Goods and Public Policy*, 17 PUB. FIN. 197 (1962); Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. STAT. 387 (1954). For examples of the analysis of information works as public goods, see, for example, Arrow, *supra* note 17; William W. Fisher III, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1659, 1700-04 (1988); William R. Johnson, *The Economics of Copying*, 93 J. POL. ECON. 158, 161 (1985); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326-27 (1989); Lemley, *supra* note 16, at 994-95.

21 *See* Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 299-306 (1970).

22 For a recent detailed exploration of this long-understood possibility of decoupling the two functions, see Daniel J. Hemel & Lisa Larrimore Ouellette, *Innovation Policy Pluralism*, 128 YALE L.J. (forthcoming 2018). The three standard alternatives

ends up being the preferred institutional alternative, in the absence of rivalry in use the design of property rights will be very different. The weaker benefit of property rights accompanied by the unnecessary restriction on use requires particular vigilance in designing the rights to maximize the incentive benefit and minimize the use burden.²³

II. NONRIVALRY OBSCURED

When there is no rivalry there is no tragedy and no need for governance, which results in a very different framework for analyzing and evaluating property. It is not surprising, then, that IP poses a challenge to anyone invested in a uniform framework of property rights grounded in the logic of a Hardinian tragedy. The reaction to this challenge has been to try to reintegrate IP into mainstream property theory.²⁴ More surprising is the fact that scholars more skeptical of IP and invested in the need for “balance” within it have often failed to emphasize the far-reaching implications of nonrivalry. Scholarship by IP skeptics often tends to understate, misstate or obscure the point in a way that causes much of its edge to dissipate. This has paved the way for the frontal attack launched on nonrivalry by IP maximalists. There are two typical ways in which IP skeptics understate and obscure the fundamental implications of nonrivalry: a muddled version of the role of nonrivalry in the positive dynamics and normative analysis of information goods; and too sweeping an acceptance of transactional efficiency as the focus of the analysis.

A. Public Goods Analysis Muddled

Standard accounts of IP start with the proposition that information goods are public goods.²⁵ Often, however, they describe IP as a solution to a public

to IP that can decouple the incentive to produce from the governance of use are: governmental prizes, governmental subsidies, and government production of the good. Needless to say, each of these alternative strategies comes with its own set of relative advantages and drawbacks. See Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691, 694 (1983).

23 See Lemley, *supra* note 16, at 997-98; Oren Bracha & Talha Syed, *Beyond Efficiency: Consequence-Sensitive Theories of Copyright*, 29 BERKELEY TECH. L.J. 229, 239-40 (2014).

24 See *infra* Part III(A).

25 See sources cited in *supra* note 20.

goods problem.²⁶ This is typically accompanied by the observation that producers' difficulty in recouping their development cost is attributable to both characteristics of such goods: non-excludability and nonrivalry.²⁷ This is wrong. There is no "public goods problem" — a term that fuses together the effects of the two elements.²⁸ There is an appropriability problem with public goods that has nothing to do with nonrivalry. The dynamic incentive to produce problem is attributable solely to non-excludability and the gap between the development and copying cost.²⁹ Nonrivalry is the inherent advantage of public goods as not requiring allocation in use. It is also the reason why the property solution to the appropriability problem necessarily creates a new difficulty in the form of unnecessarily restricting some uses.

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- 26 See, e.g., Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 970 (1990); David A. Rice, *Public Goods, Private Contract and Public Policy: Federal Preemption of Software License Prohibitions Against Reverse Engineering*, 53 U. PITT. L. REV. 543, 546 (1992); JAMES BOYLE, SHAMANS, SOFTWARE AND SPLEENS 41 (1996); Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1182 (2000); Oren Bracha, *Standing Copyright Law on its Head? The Googlization of Everything and the Many Faces of Property*, 85 TEX. L. REV. 1799, 1825 (2007); Diane Leenheer Zimmerman, *Copyrights as Incentives: Did We Just Imagine That?*, 12 THEORETICAL INQUIRIES L. 29, 30 (2011).
- 27 See, e.g., Fisher, *supra* note 20, at 1700; O'Rourke, *supra* note 26, at 1182; William Fisher, *Theories of Intellectual Property*, in NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168, 169 (Stephen R. Munzer ed., 2001); Zimmerman, *supra* note 26, at 30; Brett Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 947 (2005).
- 28 Oren Bracha & Talha Syed, *Beyond the Incentive-Access Paradigm? Product Differentiation and Copyright Revisited*, 92 TEX. L. REV. 1841, 1849 (2014).
- 29 *Id.* To demonstrate this point, assume a resource which is nonrival but highly excludable — perhaps a video clip protected by a hypothetical low-cost, unbreakable anti-copying technological measure. There is no appropriability problem here and no resultant under-incentive to produce. If there is any policy problem, it pertains to the inefficient ability of the producer to over-exclude others from a resource which is nonrival. Now assume a resource which is highly rival and nonexcludable, say, an open pasture. Here, in addition to the static use problem there is an appropriability problem that may result in underproduction (for example, in regard to replanting the pasture). This is of course the paradigmatic case of the tragedy of the commons. As these examples demonstrate, the appropriability problem that may issue in suboptimal dynamic incentives has nothing to do with nonrivalry. Its primary cause is non-excludability, sometimes accompanied by other related conditions.

The point is not a sterile scholastic insistence on the precise definition of public goods, but a caveat about the unfortunate effect of the obfuscation. Instead of being clearly identified as the built-in advantage of information goods, an advantage that is neutralized by property rights, nonrivalry is presented as an ambiguous feature operating on both sides of a “public goods problem.” The main point of the analysis is diluted: nonrivalry is an unmitigated virtue, one whose salutary effect is compromised by property. Instead nonrivalry becomes a double-edged sword with ambiguous implications. This, in turn, further obscures the fact that property is a necessarily flawed mechanism in this area. To the extent that it does any good at all by creating an incentive to produce, it comes with the inevitable corollary of harmful unnecessary exclusion. To demonstrate, consider the case of “quasi-rents” where the IP right is sufficient exactly for a producer to recoup his investment. In this case, the IP right generates only as much exclusion as is necessary to ensure the generation of the resource. And the question arises: how can we possibly do any better? Without this degree of exclusion, the good would not be created at all and will be used by none. This, however, ignores the fact that we cannot do any better only with property. Other mechanisms might very well generate the incentive to produce, while leaving the unqualified virtue of nonrivalry untouched.³⁰

The fog created by obscuring the role of nonrivalry extends to covering the problematic character of property in this area. This, in turn, often leads to a more severe problem: an undue emphasis on transactional efficiency as the center of the analysis.

B. Transactional Efficiency Overshadowing Nonrivalry

Scholarly discussions of the desirability and design of IP rights often focus on transaction costs analysis. Why do transaction costs matter? Because market transactions are property’s main remedy for mitigating its inherent disadvantage of unnecessary restriction placed on the use of a nonrival resource. Presumably, users who value the resource at least at the marginal cost of creating and distributing an additional physical unit of it will transact with the IP owner and gain access to it.³¹ When transaction costs are low many users will gain access. High transaction costs will frustrate many of

30 These alternative mechanisms have their own downsides, of course, hence the need for comparative institutional analysis.

31 While it is often observed that the marginal cost of information is zero, information products still have *some* marginal cost because they have to be embodied and distributed in some physical form.

these transfers, thereby allowing access to fewer users and entailing more waste of resources even when transfers do take place. IP skeptics point out two kinds of relevant transaction costs.³² The first is various direct costs for transactions between owners and users. The second kind is barriers that prevent users from internalizing a significant share of the social value of their use where this value involves significant positive externalities spread over many people. When such “spillovers” are present, transactions between owners and users may not occur even when these transactions do not involve significant costs and even where the social value of the use is high.³³ Under this logic, low transaction costs strongly support the extension of property rights to encompass the relevant uses, and high transaction costs pull in the opposite direction.³⁴

32 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, 1601 (1982).

33 Mark Lemley & Brett Frischmann, *Spillovers*, 100 COLUM. L. REV. 101 (2006).

34 Gordon, *supra* note 32, at 1613-14. Gordon, who is associated with this “market failure” analysis in the context of copyright law’s fair use doctrine, has always recognized that the fair use privilege should apply even in the absence of market failures in this strict narrow sense. See Wendy J. Gordon, *Market Failure and Intellectual Property: A Response to Professor Lunney*, 82 B.U.L. REV. 1031, 1034 (2002) (“Transaction cost barriers are neither the only kind of economic problem to which fair use responds, nor the only kind of problem to which fair use should respond.”). Gordon uses the term market failures in a very broad sense that encompasses all cases where private deals cannot be relied on to achieve public ends. Specifically, she identifies two categories of market failures: a) market malfunctions include cases where private transactions cannot attain the economically efficient outcome due to direct owner-user transaction costs, positive externalities, or other reasons; b) market inherent limitations include cases where due to normative considerations other than efficiency, market transactions and their outcomes are not acceptable even if efficient. See Wendy J. Gordon, *Excuse and Justification in the Law of Fair Use: Transaction Costs Have Always Been Part of the Story*, 50 J. COPYRIGHT SOC’Y U.S.A. 149, 157-59 (2002-2003). This broad understanding of market failures, however, is still different from my argument, which is that even in the absence of market failures in either sense, there is no reason to extend IP rights where no significant incentive is generated. Gordon herself appears to accept a position close to mine. She also would approve fair use cases other than market failures in the broad sense where the effect of allowing a use is (on net) beneficial under an appropriate calculus, but she recognizes that determining that ultimate outcome of this calculus is complicated by various systemic concerns. Oral conversation with author.

What's wrong with this transaction costs analysis? The first difficulty with it is that it tends to obscure the inherently flawed character of property in this area and the fact that market transactions are an inescapably incomplete remedy for a malady that would not occur but for property. When a resource is nonrival, property creates a restriction on use which from a static allocation point of view is utterly unnecessary. Market transfers are the patch that is applied to mend this problem. And the patch is necessarily a partial one. In a world which is never free of transaction costs, market transactions will never completely restore the balance of use to that under no-property conditions, and the use they do allow comes with the extra cost of the transfer. It is, of course, important to explore how leaky the patch is due to barriers to direct user-owner transactions and spillover effects. The unfortunate slide comes when transaction costs analysis takes the center stage and nonrivalry is pushed behind the scenes. At this point the default assumption becomes that whenever transaction costs are low property is justified, and the onus is shifted to skeptics to show bargaining failures severe enough to rebut this presumption.³⁵ In this way, market transactions are converted from a last-ditch attempt to save property into a first line of defense that must be breached to have any doubts about property at all. This, in turn, prepares the ground for a more serious failure endemic to IP scholarship.

The next step arrives when acceptance of transaction costs as the center of the analysis leads to the distortion of the very purpose being pursued. Once we say that the ideal is market transfers to all those willing to pay the marginal cost rather than freedom of all to use, it becomes very easy to take the next step of asserting: and the ultimate goal is full internalization of the resource's value by the IP owner.³⁶ While this is not universally accepted, nonetheless IP

35 See Mathew J. Sag, *Beyond Abstraction: The Law and Economics of Copyright Scope and Doctrinal Efficiency*, 81 TUL. L. REV. 187, 209 (2006) (“The relevant assumption for efficient private ordering is not that there are no transaction costs, but rather that markets will be very efficient if property rights are allocated, or at least that they will be more efficient than private contract, direct government intervention, or the too often neglected alternative of doing nothing at all.”). Sag calls the assumption of low transaction costs “market optimism” and criticizes it as overoptimistic on several grounds. This, however, already concedes too much because it implicitly adopts the proposition that whenever barriers to efficient bargains are low IP rights are justified.

36 See Lemley, *supra* note 16, at 1033 (describing the common leap by courts and commentators “from the idea that intellectual property is property to the idea that the IP owner is entitled to capture the full social value of her right”). Wendy Gordon with whom market failure analysis of fair use in copyright is associated has never taken this extra step of embracing full internalization.

scholarship is rife with assertions that the ultimate goal is making sure that the owner internalizes the full value of his or her innovation and that therefore IP rights should be extended to every use of information goods, unless “market failures” are expected to frustrate the transaction.³⁷ Almost imperceptibly, full internalization replaces the freedom of all to use as the goal. Yet this is simply wrong. There is no reason rooted in either dynamic production incentives or static use allocation to aspire to full internalization of the value of a nonrival resource. Possibly, the confusion comes from the analysis of resources that are rival in use. In that context where use by one affects the use value of others, the ideal is often described as full internalization of use externalities. Whatever the merits of full internalization in that context, the logic does not apply to nonrival resources. In the absence of rivalry, full internalization is a pure negative from a static perspective (or inert, if implausibly assumed to be

Gordon, *supra* note 32. In fact, Gordon rejects full internalization as the desired goal of copyright policy. Oral conversation with author.

- 37 See, e.g., Paul Goldstein, *Derivative Rights and Derivative Works in Copyright*, 30 J. COPYRIGHT SOC'Y U.S.A. 209, 227 (1983) (justifying the derivative works right in copyright because it allows the copyright owner to “proportion its investment to the level of expected returns from all markets”); PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY* 178 (1994) (arguing that “[t]he logic of property rights dictates their extension into every corner in which people derive enjoyment and value from literary and artistic works”); Trotter Hardy, *Property (and Copyright) in Cyberspace*, U. CHI. LEGAL F. 217 (1996) (recognizing that nonrival information goods do not suffer from a tragedy of the commons but arguing against “group ownership” nonetheless on grounds of full internalization because of the supposed high transaction costs at the stage of defining legal rights in such goods); Frank Easterbrook, *Who Decides the Extent of Rights in Intellectual Property?*, in *EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY* (Rochelle C. Dreyfuss, Diane Zimmerman & Harry First eds., 2001); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 717 (2001) (identifying patents with the theory that property rights emerge when “it becomes economically efficient to internalize benefits and costs”); William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 475 (2003) (arguing that it is a proposition “widely believed by most economists” that “so far as is feasible, all valuable resources, including copyrightable works, should be owned, in order to create incentives for their efficient exploitation and to avoid overuse”). For critical treatments of the full internalization argument, see Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283, 311-25 (1996); Cohen, *supra* note 16; Lemley, *supra* note 16, particularly at 1037-38 (connecting full internalization arguments in IP to the tragedy of the commons).

completely costless). From a dynamic point of view, internalization is only required to the point sufficient to incent the creator to produce, but beyond that it serves no purpose.

To demonstrate, consider the theoretical case of perfect price discrimination.³⁸ In this fanciful scenario, the owner can, at no cost to him- or herself, charge each user the maximal price he is willing to pay. The result is twofold: a) all users willing to pay at least the marginal cost get access; and b) the owner internalizes the total social value of the resource.³⁹ Note that (a) simply restores the balance of use to that which would obtain in the absence of property, and (b), as such, is a side-effect rather than a sought-after goal. Any internalization beyond that sufficient to incent the production of the good is a “mere transfer” and therefore inert.⁴⁰ In other words, the fantasy of costless full internalization is an imagined perfect patch and nothing more. There is no reason to aspire to full internalization or mimic the result of an imagined frictionless market.⁴¹ Leaving the fantasy behind, in reality there is no perfect price discrimination and market transfers are never frictionless; they always involve some cost, and when that is high enough it also frustrates the transfer and inefficiently prevents the use.⁴² As a result, any internalization beyond that necessary to ensure production is a pure negative. Furthermore, significantly excessive rents available due to over-internalization by the owner may fuel various

38 See JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 135 (1988) (discussing perfect price discrimination); William Fisher III, *When Should We Permit Differential Pricing of Information?*, 55 *UCLA L. REV.* 1, 4 (2007) (discussing first-degree price discrimination in the context of IP). To make the analytical point, the example in the text assumes an idealized case of a perfect, costless pricing scheme and no positive externalities to uses of the work.

39 See SUZANNE SCOTCHMER, *INNOVATION AND INCENTIVES* 37 (2004); Harold Demsetz, *The Private Production of Public Goods*, 13 *J.L. & ECON.* 293, 296, 300–04 (1970).

40 An alternative fanciful example is illustrative. Assume that the pricing scheme charges the maximal price to most users, but 10% less than maximal price to those located in the top 20% of the demand curve. Further assume that this is more than enough to ensure production. From an efficiency standpoint, this scenario is exactly as optimal as full internalization. Any internalization beyond production level is simply irrelevant.

41 Cohen, *supra* note 16, at 502 (“The possibility that authors, if given undivided property entitlements and left to their own devices, might create efficient rights-management institutions says nothing about whether they should be given undivided property entitlements in the first place.”).

42 See Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 *VAND. L. REV.* 2063, 2072 (2000).

wasteful dynamics in the behavior of multiple producers vying to capture these rents and ultimately dissipating them.⁴³ And these grave problems arise even prior to considering the troubling distributive implications of full internalization through market transactions. There are two such distributive concerns: a) relying on a price system for allocating access to goods under conditions where the ability to pay is deeply shaped by unjust background distributive patterns,⁴⁴ and b) the questionable equity of allocating all social surplus associated with information goods to producers.⁴⁵

In short, full internalization is not a defensible policy goal in regard to information goods. Yet obscuring nonrivalry and devoting overblown attention to transactional efficiency almost inevitably sets one on the slope that leads to accepting full internalization as the goal, property as the rule, and limitations on property as the exception that applies only in cases of severe market failures. From here to opening the door for the direct attack on nonrivalry by IP maximalists the way is short.

III. IN SEARCH OF A DECENT TRAGEDY

Nonrivalry is troubling for anyone seeking a unified theory of property rights grounded in the logic of a tragedy of the commons. This explains why there has been a decades-long effort to push nonrivalry aside and reintegrate IP into general property theory. Perhaps the most conspicuous but also subtle example of this trend is the major work on the economics of IP by William Landes and Richard Posner.⁴⁶ In the introduction of their book, the authors declare that their economic arguments for IP are not based primarily on an incentive to produce, but rather on “optimal management of existing stocks

43 See *infra* text accompanying notes 89-90.

44 See Bracha & Syed, *supra* note 23, at 305-07. See also Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 971, 996 (2012).

45 This is not to say that no desert considerations are relevant and that producers are not entitled to *some* of the surplus. See Bracha & Syed, *supra* note 23, at 295-96 (discussing the distributive concern of fair compensation to creators). See also Lawrence C. Becker, *Deserving to Own Intellectual Property*, 68 CHI.-KNT L. REV. 609 (1993) (discussing desert considerations in intellectual property); Stan J. Liebowitz, *Is Efficient Copyright a Reasonable Goal?*, 79 GEORGE WASH. L. REV. 1692 (2011) (discussing “fairness” concerns with limiting creators’ rents to those strictly necessary to induce the creation of the work).

46 WILLIAM M. LANDES & RICHARD L. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* (2003).

of intellectual property, congestion externalities, search costs, rent seeking, and transaction costs.⁴⁷ In other words, the primary concerns are about static allocation in use, things that are misperceived as issues of static allocation in use, and the implications arising from property as a use allocation mechanism. From this follows the authors' belief that "[t]he possibility that such rights may also confer static benefits, eliminating congestion externalities comparable to those of the common pasture... has been neglected because of the widely held belief that intellectual property, not being physical, cannot be worn out, crowded, or otherwise impaired by additional uses."⁴⁸ Thus common grazing pastures and tragedies are brought back to haunt IP.

The quest to bring back the tragedy to information goods started much earlier. In the same year that Hardin published his canonical article, Yoram Barzel argued that unowned knowledge can lead to inefficient innovation patterns.⁴⁹ Barzel reasoned that when technological knowledge is uncontrolled, innovators, rather than wait for the optimal moment to invent, will rush to capture the value of the invention. As a result, the invention may be introduced too soon, thereby eroding and possibly even completely depleting its social value. Barzel concluded that basic knowledge "is thus overexploited comparably to public roads, fisheries, and oil and water pools."⁵⁰ The misleading invocation of the tragedy of the commons caused the paper to be standardly read as presenting "a classic common resource or 'common pool' problem" and even as reintroducing "rivalry" to technological innovation.⁵¹ Barzel himself further encouraged this

47 *Id.* at 9-10.

48 *Id.* at 14-15.

49 Yoram Barzel, *The Optimal Time of Innovations*, 50 REV. ECON. & STAT. 348 (1968).

50 *Id.* at 348. Barzel cited Hardin's predecessors in developing the common pool argument.

51 John Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 440-41 (2004). The invocation is misleading because the tragedy of the commons and rivalry pertain to static use of resources and Barzel's paper was about possible inefficiencies in the dynamic production of resources. See discussion in text accompanying *infra* notes 79-80. The use in the economic literature of terms such as "R&D Rivalry" to describe the interaction of several competing firms in regard to the production of an innovation is conducive to the same confusion. For examples of such usage (but not the confusion), see, Frederic M. Scherer, *Research and Development Resource Allocation Under Rivalry*, 81 QUART. J. ECON. 359 (1967); Pankaj Tandon, *Rivalry and the Excessive Allocation of Resources to Research*, 14 BELL J. ECON. 152 (1983); Michael L. Katz & Carl Shapiro, *R & D Rivalry with Licensing or Imitation*, 77 AM. ECON. REV. 402 (1987).

reading by adding a footnote that suggested prescribing the usual anti-tragedy remedy: exclusive private rights for developing an innovation.⁵²

Nine years later Edmund Kitch picked up Barzel's cue and launched an all-out attack on nonrivalry in the area of IP.⁵³ Kitch's purpose was stated in the first paragraph. The article, he said, "reintegrates the patent institution with the general theory of property rights."⁵⁴ And the arguments he provided about patents "can also be offered in support of exclusive ownership of anything of value — say, for instance, forty acres of land."⁵⁵ Kitch's basic insight was that technological innovation could be conceptualized as a "prospect," meaning an opportunity to develop a known technological possibility.⁵⁶ When open for all, the process of developing the prospect produces various wasteful and inefficient dynamics and the result is that the process can "be undertaken efficiently only if there is a system that tends to assure efficient allocation of the resources among the prospects at an efficient rate and in an efficient amount."⁵⁷ Luckily, such an exclusive-control solution to Barzel's reintroduction of the common pool problem already exists. It goes by the name of "patent." This was a direct challenge to the common assumption that property's central purpose is solving the problem of "scarcity, while information has appeared to be an example of something that can be used without limit."⁵⁸ Kitch aimed at the heart of the view that IP is special: the common assumption of nonrivalry notwithstanding, uncoordinated use of information goods involves various negative effects; the remedy for this problem is property as decentralized governance; and IP is reintegrated into the general framework of property.

Kitch's seminal article became the fountainhead of important strands of IP scholarship that followed the same pattern. Mark Lemley dubbed the arguments of this scholarly camp "ex post" justifications of IP.⁵⁹ Unlike "ex ante" justifications rooted in the appropriability problem and the need for a dynamic production incentive, "ex post" arguments purport to justify IP on the basis of problems pertaining to the use of an information good already in existence. There are three main variants of ex post arguments, two of which are

52 See Barzel, *supra* note 49, at 352, n. 11. Barzel called this exclusive right a monopoly. Modern commentators are much more likely to call it property.

53 Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977).

54 *Id.*

55 *Id.* at 275.

56 *Id.* at 266.

57 *Id.*

58 *Id.* at 275.

59 Mark A. Lemley, *Ex Ante and Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129 (2004).

traceable to Kitch's original article: commercialization, follow-on innovation, and congestion. Each variant offers a way of re-describing information goods as involving rivalry or something sufficiently similar to reinstate a tragedy in use and with it property's governance function. I describe briefly each of the three variants and then turn to examining them more critically.

A. Three Potential Tragedies

1. Commercialization

This family of arguments starts with the proposition that creating a new information good is only the first stage in bringing a new product to the market. To become a product available to consumers, information goods often require significant additional investment in commercialization. The variants of the argument differ in their answers to two questions: What exactly does commercialization mean? And why does it require property rights? There are two main answers to each of these questions.

The most common concept of commercialization and the one dominant in Kitch's article is that of turning a raw invention into a product for which there is substantial consumer demand.⁶⁰ Sometimes the two are described as invention vs. innovation.⁶¹ The costly development process, the argument goes, rarely ends with the raw invention — the basic technological solution. Many inventions are never turned into products. Others require additional years and millions of dollars to become products. Commercialization is this often lengthy and expensive process of developing an invention into a product. One may ask: If invention is not the end of the process, what distinguishes it as a distinct stage from product development? Indeed, part of the point of the commercialization argument is to collapse a clear-cut pre/post invention

60 See Kitch, *supra* note 53, at 271, 276-77. The distinction was originally developed in the context of technological inventions and seems to better fit it. It can be applied, however, *mutatis mutandis*, to at least some expressive works. For the literature following this vein of the argument, see Kieff, *supra* note 37; F. Scott Kieff, *IP Transactions: On the Theory & Practice of Commercializing Innovation*, 42 HOUS. L. REV. 727, 736-37 (2005); Jonathan M. Barnett, *Intellectual Property as a Law of Organization*, 84 S. CAL. L. REV. 785 (2011); Jonathan M. Barnett, *Copyright Without Creators*, 9 REV. L. & ECON. 389, 390 (2013); Jonathan M. Barnett, *Why Is Everyone Afraid of IP Licensing*, 30 HARV. J.L. & TECH. 123, 146 (2017).

61 WILLIAM B. ROUSE, *PEOPLE AND ORGANIZATIONS: EXPLORATIONS OF HUMAN-CENTERED DESIGN* 257 (2007).

distinction into a less sharply differentiated continuity.⁶² Still, the most plausible way of differentiating the two stages is on the basis of the degree of uncertainty under which each unfolds. Product development may be costly and it is not risk-free, but it operates under conditions of significantly more certainty, at least in probabilistic terms, as compared to invention.⁶³ Product development is, as it were, searching for a coin that is hidden closer to the lamppost, even if the search area is large and the process costly.

A somewhat different meaning of the term “commercialization” in the literature refers to investment not in product development per se but in various activities incidental to selling a product in the market. These include market research, advertising and promotion as well as other marketing-related activities. The investments in these may be substantial and in some sectors may reach the magnitude of the investment in creating the information good and later product development.⁶⁴

Why does commercialization in either of the two meanings require property rights? One answer is rooted in the realization that there is an additional costly component to developing an information good in “the real world” — i.e., as a product actually available and useful to consumers — above and beyond the creation cost of the raw innovation. This additional investment creates a distinct information good — be it a product design or advertising — which often, like the innovation itself, is non-excludable — once it has been created and used, it is very hard to exclude others from enjoying its benefit. This gives rise to the familiar appropriability problem, now in regard to the additional information good, and requires the familiar solution of property rights above and beyond those extended to the raw innovation.

Kitch offered a different explanation focused not on the need to recoup the extra investment in commercialization but on the social interest in coordinating and managing the process efficiently.⁶⁵ The core of the argument is that if everybody is free to engage in commercialization of an innovation, various

62 See Ted M. Sichelman, *Commercializing Patents*, 62 *STAN. L. REV.* 341, 354-48 (2010) (discussing the contrast between the continuous character of innovation and traditional economic theory’s focus on a discrete moment of invention).

63 See Robert P. Merges, *Rent Control in the Patent District: Observations on the Grady-Alexander Thesis*, 78 *VA. L. REV.* 359, 381 (1992) (invention “is an expensive and unpredictable activity”). For a discussion of the relevance of the level of uncertainty in innovation for IP policy, see Talha Syed, *The Innovation Paradox* (2017) (unpublished manuscript) (on file with author).

64 See Kitch, *supra* note 53, at 277; sources cited in *supra* note 60.

65 This explanation applies more directly to the first meaning of commercialization as product development, but it could also be used, perhaps, in regard to the marketing branch of the argument.

wasteful dynamics pertaining to the uncoordinated activities of the multiple actors will follow and will result in unnecessary duplicative investment. Firms hoping to capture the value of the commercialized innovation have a private interest to engage in these activities, while their wasteful and duplicative behavior might dissipate much of the social value of the invention. A strong property right in the innovation can avert this rent dissipation. By making the owner the sole beneficiary of the innovation's exploitation value, the property right removes the incentive for unauthorized commercialization and centralizes control of the process in his hands. No individual has an incentive to invest in further commercialization from which she can later be excluded by the owner. The owner has the incentive to announce her claim to the world and optimally coordinate the commercialization process, including through market transactions with others, where necessary.

2. *Follow-On Innovation*

A follow-on innovation is a secondary information good that builds on or incorporates a primary information good in some way: a sequel to a movie or an improved version of a mousetrap. One may wonder how a follow-on innovation in this sense is different from product commercialization discussed above. The plausible criterion is the same one that distinguishes product commercialization from the raw innovation on which it builds: the degree of uncertainty under which the process unfolds.⁶⁶ Product commercialization is a further development of a primary innovation operating on the more predictable side of the informational frontier; a follow-on innovation builds on and develops a primary one on the more unpredictable side. The underlying assumption, then, is that a follow-on innovation may be entitled to its own IP right, provided that it satisfies the general threshold criteria in the relevant field.⁶⁷ Therefore production incentives as a solution to an appropriability problem pertaining to the follow-on innovation can be laid aside in this case.

The main argument for more property rights in the primary innovation is founded on the coordination argument. Again the core of the claim is that a race among multiple entrants to capture the value of a follow-on innovation will result in wasteful and duplicative dynamics.⁶⁸ The expected result is rent

66 See *supra* text accompanying note 63.

67 To be sure, there may be differences between various IP areas in regard to when and under which conditions the creator of a follow-on innovation is entitled to receive protection. See Lemley, *supra* note 16. These differences can be bracketed for current purposes.

68 See Kitch, *supra* note 53, at 276. For critical treatment, see Roger Donald G. McFetridge & Douglas A. Smith, *Patents; Prospects and Economic Surplus:*

dissipation, possibly down to the point where the entire social value of the invention is depleted. The prescribed remedy is a strong property right in the primary innovation that covers the secondary innovation as well. The promised result is twofold. Entrants now cannot capture the value of the follow-on and are therefore deterred from unauthorized entry to the race. And the owner of the primary innovation who now internalizes all the costs and benefits of the secondary innovation will have an incentive to optimally coordinate its development. The follow-on innovation process is optimally managed and rent dissipation is averted.

3. Congestion

The third argument for restoring the tragedy to nonrival information goods follows a somewhat different logic. It starts with the proposition that, contrary to the common assumption, the use of an information good often does have a negative effect on the ability of others to use it. Because they often involve negative use externalities, information goods are congestible. As the number of uses increases, so do the negative externalities associated with them, up to the marginal point where these externalities outweigh the value of additional uses. There are two variants of the claimed negative use externalities and both of them apply predominantly to expressive works.⁶⁹

One version of the argument is that uncoordinated secondary versions of the same expressive work may undermine the stable meaning of a work and as a result reduce the value of “conflicting” uses for users.⁷⁰ The idea is that

A Comment, 23 J.L. & ECON. 197 (1980); L. Beck, *The Prospect Theory of the Patent System and Unproductive Competition*, 5 RES. L. & ECON. 193, 194 (1983); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 872 (1990); A. Samuel Oddi, *Un-unified Economic Theories of Patents - The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 281-82 (1996); Lemley, *supra* note 16, at 1044-67. For later literature developing the argument in the context of product differentiation theory, see Michael Abramowicz, *An Industrial Organization Approach to Copyright Law*, 46 WM. & MARY L. REV. 33 (2004); Christopher S. Yoo, *Copyright and Product Differentiation*, 79 N.Y.U. L. REV. 212, 221 (2004); Michael Abramowicz, *A Theory of Copyright's Derivative Right and Related Doctrines*, 90 MINN. L. REV. 317 (2005). For a critique of these, see Bracha & Syed, *supra* note 28.

69 This does not preclude the possibility that the argument sometimes may be applicable also to technological inventions.

70 See Landes & Posner, *supra* note 37, at 487-88. See also Justin Hughes, “Recoding” *Intellectual Property and Overlooked Audience Interests*, 77 TEX. L. REV. 923, 952 (1999) (discussing the interest of the audience in stable meaning).

audience exposure to Alice Randall's *The Wind Done Gone*⁷¹ or the TV series *Sherlock*⁷² is likely to change for members of the audience the meaning of the original works on which these follow-ons are based, as well as the meaning of other follow-ons. This destabilization of meaning may have a negative effect on the value derived by individuals from the primary or other secondary works. Disney characters may never be the same after one is exposed to their lewd and illegal behavior in the Air Pirates comics.⁷³ The result is a network of possible negative externalities between the uses of a family of related works with "unstable" meaning.

A second structure of the argument applies not to destabilization of meaning but simply to the fatigue of overexposure to the same work.⁷⁴ *Star Wars* characters were exciting and fresh the first ten times you saw them. But after being bombarded with them in the form of action figures, animated versions, t-shirt prints, toilet paper, and any other imaginable form of paraphernalia, the excitement and the value were diluted. And again the overall result is a negative network effect: at least beyond a certain threshold, congestion kicks in and every use reduces the value of all the others.

The solution to the congestion problems is a strong property right in the primary work that encompasses all possible duplicative and secondary uses of it. Congestion externalities are not eliminated, but centralized control leads to optimization. Under the broad property rights, the owner stands to internalize both the benefits and negative externalities of every use. He therefore has an incentive to coordinate the patterns of use so that their overall net benefits are maximized when the negative effects of fatigue and meaning destabilization externalities are factored in. The owner can achieve this optimal pattern either through self-exploitation of the work or through market transactions with others.

71 *The Wind Done Gone* is a novel by Alice Randall that tells an alternative version the novel *Gone with the Wind* by Margaret Mitchell from the point of view of a slave. See *Suntrust v. Houghton Mifflin Co.*, 252 F. 3d 1165 (11th Cir. 2001).

72 *Sherlock* is a BBC TV series loosely based on Sir Arthur Conan Doyle's Sherlock Holmes where the events are set in modern-day England.

73 See *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751, 760 (9th Cir. 1978) (an action brought by the Walt Disney corporation against the creator of the Air Pirates Funnies. The comic strip included close reproduction of Walt Disney characters, which were presented in bawdy adult contexts, such as drug use or sexual activities).

74 See Landes & Posner, *supra* note 37, at 487; Stan J. Liebowitz & Stephen E. Margolis, *Seventeen Famous Economists Weigh in on Copyright: The Role of Theory, Empirics, and Network Effects*, 18 HARV. J.L. & TECH. 435, 449-52 (2005).

B. The Candidates Critiqued

Before we conclude that the tragedy has thus been restored to IP, each of the arguments requires closer examination. On such closer scrutiny, the arguments fail to convincingly challenge nonrivalry and restore the tragedy of the commons. The first two arguments suffer from analytic confusion. It is this confusion that endows them with ostensible plausibility. While purporting to be about negative effects of unrestricted use of information goods, when closely examined all variants of these two arguments turn out to be about the dynamic production of such goods, not about their static use. Once it is understood that the identified problems are about production, the plausibility of using property as a method of governance for controlling and allocating use dissolves. Unlike the first two, the third argument relating to congestion is about rivalry in use. Its fatal flaws are implausible empirical and normative assumptions.

1. Commercialization

The commercialization argument deeply obscures the main issue at stake. It presents the identified problem as pertaining to the use of the information good that is being commercialized. Under this assumption, it appears that something similar to a tragedy is restored, especially with the coordination type issue. Once this happens, the problem becomes one of governance of use and the obvious fallback solution of property in the information good appears to be the natural option. As it happens, however, neither of the two commercialization problems is about static use of the information good. Both are problems related to the dynamic production of further information: either development of the raw innovation into a product or related information such as advertising or marketing data.

Starting with the appropriability issue, here it should be obvious that we are dealing with the familiar problem of the incentive to produce a non-excludable information good, whether marketing-related or product development. This has nothing to do with allocation and use of the primary innovation. Two implications follow. First, if a property right is justified at all on this basis, it would be in the secondary information good whose creation we are trying to incent, not in the primary one, and the obvious candidate for receiving it is the developer of the secondary good.⁷⁵ Second, in regard to the further

75 This is precisely what Ted Sichelman is proposing. See Sichelman, *supra* note 62 (proposing granting a commercializing patent to the person who commits to commercializing an invention). See also Michael Abramowicz, *The Danger of Underdeveloped Patent Prospects*, 92 CORNELL L. REV. 1065 (2007) (proposing

information goods, the framework for justifying property rights in nonrival goods explained above applies.⁷⁶ Marketing- or product development-related information is non-excludable which may result in an inability to appropriate enough of its value to incent its production. Because this information is also nonrival, a property right is a problematic solution to this problem. A property right may alleviate the dynamic incentive to produce problem, but it plays a purely negative role on the static use side. Therefore the usual framework for assessing property rights in such cases applies: a high threshold for justifying any intervention, strict comparative institutional analysis, and specific design sensitive to the conflicting effects of the property alternative.

The branch of the argument focused on commercialization as a marketing investment has serious trouble surviving the first hurdle. Marketing costs are ubiquitous. Many other goods which are not information goods involve a substantial marketing investment that suffers from a similar appropriability problem. Yet there is hardly any suggestion that special measures are needed to fix such a problem.⁷⁷ There is no flood of calls for exclusive rights in selling pizza because marketing pizza is expensive and non-excludable. The tacit assumption is that the problem is not severe enough and that any solution, certainly one based on exclusionary rights, is bound to do more harm than good. Similar calls in the context of IP seem to hold some sway because of the confusing projection of the appropriability of marketing investment onto the use of the primary information good. Once we properly refocus the lens on the production of the related information good, the marketing of information goods does not appear unique and the plausibility dissolves.

Some aspects of commercialization as product development stand a better chance of surviving the first hurdle of establishing a plausible case for intervention to alleviate an appropriability problem. The lengthy and expensive process of clinical testing of pharmaceuticals is a good example.⁷⁸ The same may be true perhaps of the recent calls for general commercialization patents to incent product development from raw inventions.⁷⁹ Passing this threshold, however, still leaves intact the two other prongs of the close scrutiny required for property in information goods: comparative analysis of alternative

auctions of patent extensions in cases where patented inventions are likely to remain underdeveloped).

76 See *supra* text accompanying notes 20-22.

77 See Lemley, *supra* note 16, at 1048-49; Wendy J. Gordon, *The Core of Copyright: Authors, Not Publishers*, 52 HOUS. L. REV. 613, 668 (2014).

78 See Benjamin N. Roin, *Unpatentable Drugs and the Standards of Patentability*, 87 TEX. L. REV. 503 (2009).

79 See Sichelman, *supra* note 62.

appropriability mechanisms and a tailored design of property with an eye toward production incentives rather than use governance.⁸⁰

What of the coordination problem? At first blush, this issue may seem to be about use. The dynamics of multiple individuals acting rationally on their interest leading to a collectively “ruinous” outcome seems reminiscent of the tragedy of the commons. So does the need for coordination. The crucial difference, however, is that here the wasteful behavior is in relation to the dynamic production of a new or additional resource, not the static use of an existing one. The distinction is fundamental rather than trivial. Talk of collapsing the “ex ante” and “ex post” of a resource production into a continuous process or attempts to describe the development of an additional resource as a use of the existing one are unhelpful obfuscations. Once one looks beyond references to innovation as a “common pool”⁸¹ or confusing terms such as “Rival R&D,”⁸² it becomes clear that the problem of coordination pertains to the production of a new information good, not the use of the primary one. Commercialization, even in its coordination variant, does not restore rivalry in use after all.

Once it is understood that the problem is coordination of the production of the related information good, how should it be addressed? Here the commercialization literature has a valid point. A property right in the primary innovation is likely to prevent multiple entrants from trying to develop the related information, at least as long as there is no promised distinct property right in that secondary information.⁸³ If firm A has a patent in the raw innovation of the incandescent lightbulb, it is unlikely that there will be a rush of uncoordinated investment by other firms to convert that invention into a consumer product or to invest in its marketing. The reason is that only the patent holder and those authorized by her will be reaping the fruits of such investment.⁸⁴ What

80 See *supra* text accompanying notes 21-22.

81 See Barzel, *supra* note 49; Duffy, *supra* note 51, at 440.

82 See sources cited in *supra* note 51.

83 A distinct property right in the related innovation may create rents and attract entry even in the presence of a right in the primary one.

84 How to balance such coordination of production concerns with the other concern of incentive to produce is a different question that will be bracketed here. One possibility is some form of blocking patent of the kind given today to developers of significant technological improvements. See Lemley, *supra* note 16, at 1008-10 (discussing blocking patents). Another possibility offered by Ted Schilman is a commercialization patent given to a party who *commits* to commercializing an invention that will not be blocked by a primary patent in the invention itself. See Sichelman, *supra* note 62, at 345. Ultimately the question is what combination of coordination and attraction of potential commercializing firms is preferable.

is less clear is why the IP right in the primary innovation needs to be stronger or broader than it would otherwise be absent this consideration.

Ultimately, the more important question here is that of timing: what is the right point in time at which the property right in the primary innovation should start? And here the clear understanding that we are dealing with the production of two related information goods — a primary innovation and secondary commercialization information — helps provide a reasoned analysis. Recall that what distinguishes the primary innovation from product commercialization is the degree of uncertainty under which the development process unfolds.⁸⁵ This parameter tracks well the tradeoff between centrally coordinated innovation and such that is open to many competing individuals. It is under conditions of strong uncertainty that the advantages of “many minds” working on the same problem with no central coordination tend to outweigh the waste and inefficiency associated with such an open race.⁸⁶ As the search area grows closer to the lamppost and predictability increases, the advantages of coordination tend to outweigh those of many minds. This consideration supplies a criterion for answering the question of timing. As the development process shifts from the unpredictable stage of the basic innovation to the more predictable part of product commercialization, the time becomes ripe for launching the IP right in the innovation. The right taking effect shifts the process from an open race to a coordinated development.⁸⁷ Starting the IP clock at this point, rather than waiting for more advanced commercialization, has the additional virtue that the limited term of the right expires earlier and thus decreases its cost on use.⁸⁸

Properly understanding coordination of commercialization as a concern not about the use of an innovation but about the process of generating related information goods allows the clear analysis of its implications. A stronger property right in the innovation as a standard solution to a static allocation problem is no longer relevant. The relevant parameter is revealed to be the timing of the basic property right at the opportune moment for cutting off a potential wasteful race of investment in related information goods.

85 See *supra* text accompanying note 63.

86 See Merges & Nelson, *supra* note 68, at 873-74; Merges, *supra* note 63, at 372-73.

87 Consider the example of a pharmaceutical drug and the shift from the stage of developing the active substance to clinical testing. See Syed, *supra* note 63.

88 See Duffy, *supra* note 51, at 444.

2. Follow-On Innovation

The argument for coordination in follow-on innovation suffers from the same fatal flaw: on closer examination, it becomes plain that it pertains not to static use but to dynamic production. The identified coordination problem lies in the production of the follow-on information good. And yet again the confusion of describing this problem as related to rival use of the primary information good directly leads to searching for the remedy in the wrong place. Property as governance is a common solution to a resource use problem. But it is a circuitous and awkward solution to a problem of production of an additional, distinct resource.

Once this is understood, two implications follow. First, the common understanding that the problem here is some “ex post” problem additional to the standard “ex ante” incentive one is misleading.⁸⁹ The problem of rent dissipation flows directly from how IP rights work as incentives to produce.⁹⁰ Put differently, rent dissipation is just a standard negative effect of overbroad IP rights alongside its more familiar cousin — restriction on access (or “dead weight loss”). Second and relatedly, the direct cause of the problem is the property right in the follow-on innovation. A common criticism of the Kitichian argument for a stronger IP right in a primary innovation to prevent rent dissipation in the race to develop a follow-on is that this will create the same problem on the primary level.⁹¹ A stronger IP right means a larger pot of gold that is bound to fuel a wasteful gold rush and rent dissipation on the primary innovation level. This unfortunate result is not a mere accident; it is rooted in the very function that property rights play in this context. A property right in the primary innovation significantly stronger than necessary to recoup investment and ensure a production incentive creates rents — extra value internalized by the owner. And it is exactly these rents that attract wasteful entry to the race that ends up dissipating the rents.⁹² Little wonder, then, that prescribing the “more property” remedy for a production coordination problem, which is caused by too strong a property right, results in yet another

89 See Lemley, *supra* note 59, at 132 (describing coordination of improvements arguments as an “ex post theory” of IP distinct from “ex ante” theories about an incentive to produce); Fisher *supra* note 27, at 177, 179 (describing incentive to create and rent dissipation concerns as two different utilitarian “approaches” to analyzing IP).

90 See Bracha & Syed, *supra* note 28, at 1856-59 (integrating primary and secondary level rent dissipation concerns with standard incentive/access ones into a single analytic framework in the context of copyright).

91 See McPetridge & Smith, *supra* note 68, at 198; See Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305, 316-17 (1992).

92 See Fisher, *supra* note 27, at 180.

production coordination problem. It is the equivalent of fixing a hole in the floor by sawing a hole around it.

Adjusting the lens to focus on production of the follow-on as the area of the coordination problem, with property as a major cause, suggests a much more direct solution. If there is a wasteful race for the follow-on, this means that there are rents attracting the entry to this race.⁹³ And it is the property right in the follow-on that enables those rents.⁹⁴ Why not remove the cause by dialing down or even eliminating rent-creating property in the follow-on? An important strand of scholarship responded to Kitch's argument that follow-on innovation needs coordination by explaining the virtues of an open process in which "many minds" simultaneously work on the same area of the innovation frontier with no centralized control. The virtues of such an open process for dealing with the challenges of innovation under conditions of high uncertainty, this literature argues, outweigh any waste that could be averted by coordination.⁹⁵ My argument here is agnostic to this disagreement.⁹⁶

93 One may object that in most cases there are no rents due to substitute products that compete with the protected innovation and prevent any "monopolistic power." See Edmund Kitch, *Elementary and Persistent Errors in the Economic Analysis of Intellectual Property*, 53 VAND. L. REV. 1727, 1729–38 (2000). The answer to this objection is that, whether or not there is "monopolistic power," unless there is some pricing power it is not clear what attracts the entry of multiple firms in the first place; see generally Bracha & Syed, *supra* note 28, at 1851-54 (critically analyzing the debate on whether IP rights confer monopoly power and its implications for IP policy).

94 See Lemley, *supra* note 16, at 1062 (discussing how intellectual property rights may fuel wasteful races to invent by multiple parties seeking to seize the rents created by such rights).

95 See Merges & Nelson, *supra* note 68, at 872-74; Merges, *supra* note 63, at 372-73; Lemley, *supra* note 16, at 1062-63. For a survey of this and other criticism of the coordination argument, see Sterk, *supra* note 16, at 442-45.

96 One promising direction for thinking about the competing considerations here is considering the parameter of uncertainty. In general, the greater the level of uncertainty associated with the innovation, the more the advantages of a field of inquiry open to many minds tend to outweigh those of coordination. See Syed, *supra* note 63. This suggests that a relevant doctrinal lever is the IP regime's threshold requirement that considers the degree of innovation or inventiveness involved in the creation: the nonobviousness requirement in patent law and originality in copyright law. These thresholds could be adjusted so a property right is given to a secondary innovation only when the degree of uncertainty is so high that the advantages of an open race outweigh those of coordination. Arguably, patent's more meaningful nonobviousness requirement comes closer to reflecting this logic than copyright's very weak originality threshold. See

It simply states that, to the extent that a certain level of duplicative racing for a follow-on innovation seems excessive on the margin, the direct and simple way to decrease it is by weakening property rights in the follow-on and thus reducing the rents that fuel the race.⁹⁷ Once we focus on generation of the follow-on, it becomes easy to see that too much property in the follow-on that is being produced rather than not enough in the primary good is the direct source of the problem and therefore the sensible locus of intervention, if intervention is warranted.

3. Congestion

Congestion is the only one of the three arguments for bringing back the tragedy that truly does focus on static use problems plausibly described as attributable to a rival aspect of information goods. The problem here is not analytic confusion but incredulity. If each use of an expressive work (at least beyond a certain threshold) decreased the use value of the work for others, either by destabilizing its meaning or due to fatigue of observers, this would indeed be rivalry in use. This, in turn, would restore the dynamics of a tragedy of the commons, the need for a governance mechanism, and the luster of property as a prime candidate. But the argument seems farfetched for several reasons.

To begin with, the argument is simply unconvincing empirically.⁹⁸ One can always weave a story about some use externalities related to any resource. It is an entirely different matter to establish a likelihood of high enough frequency and value to these externalities to justify the cost of any governance strategy to address them. Many would agree that the emission of pollutants to the atmosphere is a serious enough problem to justify some governance mechanism for such uses of air, whether in the form of regulation or property. Far fewer would be convinced that the various use externalities of breathing (except

Bracha & Syed, *supra* note 28, at 1910-15 (discussing a more robust originality requirement as a means of reducing rent dissipation by follow-on expressive works); William Fisher III, *Recalibrating Originality*, 54 Hous. L. Rev. 437-461-68 (2016) (proposing a more robust originality requirement in copyright akin to patent's nonobviousness on the basis of the human flourishing theory of copyright).

97 See Bracha & Syed, *supra* note 28, at 1915; Wright, *supra* note 22, at 694 (observing in general that a wasteful race problem can be solved by reducing the patent or prize award, but not specifically in relation to follow-on patents).

98 At least beyond very specific exceptional contexts. See Lemley, *supra* note 16, at 1049 (finding the idea that all possible externalities be internalized through property rights “faintly preposterous”).

perhaps in unique and narrow circumstances⁹⁹) justify any governance system for this use of air. As a first approximation, most uses of information goods seem to resemble the latter. The negative use externalities are so minor on balance or easy to avoid that the cost of governance hardly seems justified.

To elaborate on the small net magnitude of congestion externalities, recall that the argument applies mainly to expressive works. In fact, the meaning destabilization branch of the argument applies not to multiple uses of a single expressive work, but to cross-work externalities between a secondary work and a primary work or between several secondary works.¹⁰⁰ Extolling the virtues of coordination in preventing use externalities, in particular meaning destabilization between works, is to deeply misunderstand the process of cultural development. Uncoordinated meaning destabilization is how culture develops. To loosely borrow a concept, culture develops through “creative destruction.”¹⁰¹ New cultural creation often changes the meaning and sometimes even reduces the value of what came before. But it is hard to imagine that we would have a more valuable or vibrant culture with more coordination aimed at optimizing the effects of new cultural meaning on preexisting meaning, even decentralized coordination through property rights and market transactions. The exposure of people to 1001 versions of *Romeo and Juliet* and *Romeo and Juliet*-inspired works, quite likely, influenced (destabilized?) the meaning of each. Does anyone think we are worse off because of the “destabilizing” effects of these versions on each other?¹⁰² Does anyone really think that we would be better off if we had some system of “optimizing” these uses through governance, even decentralized governance through distributed exclusionary powers?

And this is the point where economic arguments, even if valid on their own terms, begin to seem inapposite.¹⁰³ This article has implicitly assumed

99 For example, a highly sterile room in a hospital or a research lab, or conditions of a deadly epidemic involving an airborne virus.

100 As such, the issue is technically not nonrivalry that refers to reducing the ability of others to engage in the *same* use, but negative cross-use externalities. The two, however, have similar enough structures for this difference to be ignored.

101 JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* (1975). For use of the concept in the context of cultural development, see TYLER COWEN, *CREATIVE DESTRUCTION: HOW GLOBALIZATION IS CHANGING THE WORLD'S CULTURES* (2002).

102 For other criticism of the congestion externalities argument, see Lemley, *supra* note 59, at 145-46; Sterk, *supra* note 16, at 437-42.

103 See C. Edwin Baker, *Giving the Audience What It Wants*, 58 OHIO ST. L.J. 311, 316 (1997) (“the market’s identification of preferences and its reliance on the existing distribution of wealth are often inappropriate for determining the production and distribution of media content.”).

a welfarist normative framework of some kind, but at this point it must briefly go beyond it. Under the congestion argument, especially the meaning destabilization one, a book review should be a major cause for concern. A use of a book review by its readers may expose them as well as others to meaning that is very likely to change the meaning and value of the book for these individuals. Indeed, this is much of the point of the book review. Shall we say that book reviews should be coordinated through inclusion within the property right in the work being reviewed? The power of this *reductio ad absurdum* resides in what we are likely to call “freedom of speech” values. Without unpacking here the exact normative theory underlying this free speech sensitivity,¹⁰⁴ it should be obvious that it is on a direct collision course with the idea of controlling meaning-destabilizing uses of expressive works through a system of governance. Copyright suffers from plenty of free speech difficulties,¹⁰⁵ even when they are carelessly dismissed on the ground that copyright is an “engine of speech.”¹⁰⁶ The clash with free speech values becomes much more troubling when IP is further extended, not as a means for encouraging the production of speech, but as one for stabilization of cultural meaning.

In short, congestion, the most analytically sound of the arguments, is also based on a thin empirical foundation and questionable normative assumptions. As such, it appears to be the most desperate attempt to bring back the tragedy to information goods against all odds.

CONCLUSION: THE IP AS PROPERTY DEBATE REBOOTED

For some time now, there has been a lively scholarly debate over the question whether IP should be treated as property. One side of the debate has argued that the label of property invites absolutist conceptions and overshadows

104 For a survey of the main alternatives, see Bracha & Syed, *supra* note 23, at 249-58.

105 See, e.g., Robert C. Denicola, *Copyright and Free Speech: Constitutional Limitations on the Protection of Expression*, 67 CAL. L. REV. 283, 284 (1979); Mark A. Lemley & Eugene Volokh, *Freedom of Speech and Injunctions in Intellectual Property Cases*, 48 DUKE L.J. 147 (1998); C. Edwin Baker, *First Amendment Limits on Copyright*, 55 VAND. L. REV. 891 (2002); Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1 (2001).

106 *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985) (arguing that by encouraging creation, copyright is an “engine of free expression”).

the need for a balance between control and access in this field.¹⁰⁷ The other side has taken the position that there is nothing absolutist about property and that property's doctrinal structures can offer exactly the necessary tools for implementing balance and accommodating competing interests within IP.¹⁰⁸ Both sides have a partial point. Absolutist, so-called "Blackstonian," conceptions of property are out of vogue.¹⁰⁹ Yet the rhetoric of property holds considerable power in public discourse and tends to invoke the idea of strong control by the owner.¹¹⁰ Arguments in the legislative debates leading to the 1998 Copyright Term Extension Act¹¹¹ that songs should be paid for by their users just like tables or chairs, and that property in them should be perpetual just like any other property, are just a recent example in a long chain.¹¹² Such property arguments have been deployed at least since the seventeenth century English stationers discovered their power.¹¹³

107 See, e.g., Mark A. Lemley, *Romantic Authorship and the Rhetoric of Property*, 75 TEX. L. REV. 873, 895–903 (1997); Lawrence Lessig, *Re-crafting a Public Domain*, 17 YALE J.L. & HUMAN. 56, 81 (2006); Neil Netanel, *Why Has Copyright Expanded? Analysis and Critique*, in 6 NEW DIRECTIONS IN COPYRIGHT LAW 3, 11–15 (Fiona Macmillan ed., 2008).

108 See Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1 (2004); Hanoeh Dagan, *Property and the Public Domain*, 18 YALE J.L. & HUMAN. 84 (2006); Molly Shaffer Van Houweling, *The New Servitudes*, 96 GEO. L.J. 885 (2008); David Fagundes, *Property Rhetoric and the Public Domain*, 94 MINN. L. REV. 652 (2010); Christopher M. Newman, *Transformation in Property and Copyright*, 56 VILL. L. REV. 251 (2011).

109 Indeed, it is often observed that William Blackstone himself did not subscribe to the absolutist conception of property later ascribed to him. See Carol M. Rose, *Canons of Property Talk, or Blackstone's Anxieties*, 108 YALE L.J. 601 (1998); David B. Schorr, *How Blackstone Became a Blackstonian*, 10 THEORETICAL INQUIRIES L. 103 (2009).

110 See Lemley, *supra* note 16, at 1071 (expressing concerns that the "fixed meaning" of property "will make it all too tempting to fall into the trap of treating intellectual property as an absolute right to exclude").

111 Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998).

112 See 144 CONG. REC. 1480 (1998) (comments of Representative Barton Gordon from Tennessee who argued that small businesses have to pay for the music they use "like the tables and chairs").

113 See Henry Parke Esq., *The Humble Remonstrance of the Company of Stationers to the High Court of Parliament, April 1643*, in 2 A TRANSCRIPT OF THE REGISTER OF THE COMPANY OF STATIONERS 1554, 1584 (Edward Arber ed., 1876) ("[T]here is no reason apparent why the production of the Brain should not be as assignable and their interest and possession (being of more rare sublime and publike use,

The main point, however, is not about a gap between the understandings of property by the cognoscenti and the vulgar. Even as modern property theory rejects “Blackstonian” absolutism, large parts of it advocate a conception of property as a unified model with a strong and comprehensive right at its core,¹¹⁴ either to exclude or for “exclusive use.”¹¹⁵ Shoring up this notion is the economic argument that the purpose of property rights is to allow the owner to internalize the entire social value of the owned resource, a function that should be extended to any resource valuable enough.¹¹⁶ In fact, the latter often appears to be a thin veneer of economic reasoning layered over the fundamental assumption embodied in the former. The tragedy of the commons is closely related to these positions and this explains its dominant status in modern property thought. If all resources held in common are doomed to fall prey

demeriting the highest encouragement) held as tender in Law, as the right of any Goods or Chattels whatsoever.”)

- 114 See, e.g., Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEB. L. REV. 730 (1998); Smith, *Mind the Gap*, *supra* note 10, at 968 (describing a broad right of exclusion as “the core of an owner’s property right, which is best regarded not as absolute but as carrying heavy presumptive force”); Merrill & Smith, *supra* note 10, at 1852 (referring to the “need for the morally grounded exclusion rights at the core of property”). A sign of the robustness of this trend is the extent to which various writers have started to reembrace the Blackstonian conception of property as an absolute dominion over a thing or their own variants of “modernized” versions of it. See J.E. Penner, *The “Bundle of Rights” Picture of Property*, 43 UCLA L. REV. 711, 712-14 (1996); Adam Mossoff, *What is Property? Putting the Pieces Back Together*, 45 ARIZ. L. REV. 371 (2003); Larissa Katz, *Exclusion and Exclusivity in Property Law*, 58 U. TORONTO L.J. 275, 277 (2008); Eric Claeys, *Is Property a Thing or a Bundle?*, 32 SEATTLE U.L. REV. 617, 632-33 (2009). It seems that for many the title “neo-Blackstonian” may no longer be a pejorative.
- 115 Some of these writers advocate the notion of the “right of exclusive use” as property’s core entitlement. See Claeys, *supra* note 114, at 631. This, to the extent that it refers to property’s legal entitlements, appears to be fusing together confusingly two of property’s fundamental entitlements: a use privilege and a right to exclude. See Anna di Robilant & Talha Syed, *The Fundamental Building Blocks of Social Relations Regarding Resources: Hohfeld in Europe and Beyond*, in THE LEGACY OF WESLEY HOHFELD: EDITED MAJOR WORKS, SELECT PERSONAL PAPERS, AND ORIGINAL COMMENTARIES (Shyam Balganes, Ted Sichelman & Henry Smith eds., forthcoming 2018).
- 116 The idea is often associated with the foundational article by Harold Demsetz about the origin and theory of property rights. Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967).

to the “ruinous” dynamic of the tragedy, broad, strong, value-internalizing rights appear to be property’s uniform model.

Nonrivalry of information goods poses a fundamental challenge to this line of thought. When there is no rivalry, there is no tragedy, and when there is no tragedy, the need for property as a strong governance of use or full internalization of value mechanism disappears, hence the attack on nonrivalry and the quest for a new tragedy. The unsuccessful attempt to find a new tragedy and reintegrate IP into general property theory is as much a defense of the new quasi-absolutist theory of property from the challenge of IP as it is an attempt to use that theory to shed light on IP. And the implications of the failure cannot be contained within the sphere of information goods. If the fundamental characteristics of information goods shape their property analysis, the same may be true of other resources as well.¹¹⁷ This discredits the idea of a uniform theory of property based on a strong right to exclude and points in the direction of a resource-driven analysis of property. IP plays a similar role here to the one it played more than a century ago in challenging the dominant theory of property at the time as an absolutist natural right grounded in a natural connection between a person and an owned object.¹¹⁸ In the case of immaterial information goods, it became only too obvious that property is not a natural, person-object, self-defining relation, but an interpersonal, social relation in regard to a resource defined by the law. This triggered a reconsideration of property theory in general.¹¹⁹ Similarly today, nonrivalry of information goods, if firmly kept in focus, makes it only too obvious that there is no uniform model of property as a strong right to exclude. If this is painfully obvious in regard to IP, it might be true elsewhere. The issue becomes not so much what IP can learn from property theory, but what property theory can learn from IP.

117 See, e.g., Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986); Yochai Benkler, *Overcoming Agoraphobia: Building the Commons of the Digitally Networked Environment*, 11 HARV. J.L. & TECH. 287 (1998); Yochai Benkler, *Intellectual Property and the Organization of Information Production*, 22 INT’L REV. L. & ECON. 81 (2002).

118 See Kenneth Vandeveld, *The New Property of the Nineteenth Century: The Development of the Modern Concept of Property*, 29 BUFF. L. REV. 325, 333-40 (1979); MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW: THE CRISIS OF LEGAL ORTHODOXY* 145-46 (1992). For an important distinction between the role of property in intangibles as a catalyst for modern property theory and the understanding of property as a social relation in this theory, see di Robilant & Syed, *supra* note 115.

119 See Horwitz, *supra* note 118, at 151.

The alternative to a unified model of strong property rights is not disintegration into a freewheeling bundle of entitlements, a notion that makes property everything and therefore nothing in particular.¹²⁰ The alternative is a model of property grounded on two foundations: resource-driven analysis and a clear analytical framework of the property entitlements building blocks and the institutions they create.¹²¹ On the resource side, once the door is opened, the need for a taxonomy of resources according to their salient (im) material characteristics that are relevant for policy and intuitional analysis becomes apparent.¹²² Some of these traits will be focused on the positive dynamics of producing and using resources, such as rivalry, excludability,¹²³ or the level of granularity at which the resource is produced and distributed.¹²⁴ Others will be more directly connected to the normative side such as the commercial/personal character of a resource, the extent to which it is central to a fundamental human need, or whether it is integral to the preconditions for self-determination.¹²⁵ The result of such an inquiry will be not a monolithic theory of property, but a well-organized framework driven by resource-type. The upshot will be varied but disciplined answers to these questions: To what extent is property an adequate mechanism at all as applied to a certain resource? What is the appropriate institutional design of property? And indeed, what is the appropriate institutional design of a commons?¹²⁶

To refocus on the IP as property debate, it appears that the main question that should be asked there is not whether IP is property, but what kind of resources are information goods.¹²⁷ One crucial part of the answer is that information goods are nonrival in use. And much follows from that, not the least of which is that Hardin's "freedom in a commons brings ruin to all" simply does not apply.

120 See Talha Syed, *Architecture of Property* (2017) (unpublished manuscript) (on file with author). For an abbreviated version of the argument, see also di Robilant & Syed, *supra* note 115.

121 *Id.*

122 *Id.* See also Anna di Robilant, *Property: A Bundle of Sticks or a Tree?*, 66 *VAND. L. REV.* 869, 923–28 (2013); Julie Cohen, *Property as Institutions for Resources: Lessons from and for IP*, 94 *TEX. L. REV.* 1 (2015).

123 See Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 *YALE L.J.* 1900 (2013).

124 Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production*, 114 *YALE L.J.* 273 (2004).

125 See Syed, *supra* note 120.

126 See Benkler, *supra* note 13.

127 See Cohen, *supra* note 122, at 11.