

SILLOVERS THEORY AND ITS CONCEPTUAL BOUNDARIES

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INTRODUCTION

Wendy Gordon has noted that “most of IP law is concerned with internalizing positive externalities.”¹ In two recent articles, *Spillovers*² (with Mark Lemley) and *Evaluating the Demsetzian Trend in Copyright Law*,³ I challenge the conventional economic theory of intellectual property and specifically the idea that society ought to use intellectual property systems to internalize externalities when feasible.

The nature of the challenge—or the spillovers theory—can be viewed in two ways. I would frame the challenge as an internal one based on, and consistent with, welfare economics. In his reply to the

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1. Wendy J. Gordon, *Intellectual Property*, in THE OXFORD HANDBOOK OF LEGAL STUDIES 617, 622 (Peter Cane & Mark Tushnet eds., 2003). As Professor Gordon noted during her remarks at the symposium and has developed in detail in her scholarship, Intellectual Property (IP) law need not and should not be concerned myopically with internalizing positive externalities. It would, in my view, be better to modify her observation by dropping the word “internalizing”—that is, to say that most of IP law is concerned with positive externalities because of the nature of the intellectual activities and resources being subject to legal regulation. The difficult, contested issues—very often, boundary issues of what is allowed in the system, of what the scope of and relationships between private and public rights should be, and so on—can be understood not just in terms of whether to internalize, but also in terms of which types of externalities to internalize, which types to leave alone, and which types to promote.

2. Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257 (2007).

3. Brett Frischmann, *Evaluating the Demsetzian Trend in Copyright Law*, 3 REV. L. & ECON. 649 (2007) [hereinafter Frischmann, *Evaluating the Demsetzian Trend*].

latter article, economist Harold Demsetz seems to accept this view while critiquing aspects of the analysis.⁴ Others, such as economist Anne Barron, have critiqued the articles, suggesting that the spillovers theory is inconsistent with welfare economics, necessarily relies on some other noneconomic social theory yet to be specified, and thus is truly an external challenge to the conventional economic theories of IP.⁵

What is interesting about these responses is how they frame a boundary dispute between economic and other social theories of intellectual property. That such a boundary exists is well understood.⁶ What seems worth exploring, for purposes of this Article, is how we arrive at and frame the contours of the boundary through a discussion of spillovers. Claims about what lies on one side or the other of the boundary may turn on assumptions and beliefs that might not hold up on close inspection. For example, consider the reason why Julie Cohen believes spillover theory is unlikely to be valued by economics:

The spillovers argument, however, provides no determinate standard.... In the real world, this objection should not be fatal; indeterminacy does not rule out pragmatic policymaking. Within the epistemological confines of economic analysis of law, however, generalized reliance on “externalities” tends to be perceived as signaling a lack of analytical rigor. The problem, in other words, is not the argument itself, but rather these theorists’ inability to provide an answer in the terms that their discipline values most highly.⁷

4. Harold Demsetz, *Frischmann’s View of “Toward a Theory of Property Rights,”* 4 REV. L. & ECON. 127 (2008) [hereinafter Demsetz Reply].

5. Anne Barron, *Copyright Infringement, ‘Free Riding’ and the Lifeworld* (London Sch. of Econ. & Political Sci., Law, Soc. & Econ. Working Paper No. 17, 2008), available at <http://ssrn.com/abstract=1280893>.

6. See, e.g., Julie E. Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151, 1201 (2007).

7. *Id.* at 1200-01. Cohen calls for a more sustained engagement (by copyright scholars) with “well-established humanities and social science methodologies ... available for investigating the origins of artistic and cultural innovation,” including “[a] wide range of work in social and cultural theory” and “disciplines, ranging from musicology to literary theory to art criticism.” *Id.* at 1156, 1176. Though I disagree with some aspects of her characterization of economic analysis, I agree with her argument about the need to look more carefully at cultural theory and practice and integrate lessons from many disciplines beyond economics into our understanding of the copyright system and the various social systems it affects.

Not surprisingly, I disagree with her view of “the epistemological confines of economic analysis of law” and the perceived need for determinacy.⁸ Our disagreement rests, I think, on a version or offshoot of the boundary highlighted above. Determinacy is a requirement imposed by the exigencies of policy making or decision making more generally, but it is not an epistemological requirement imposed by economics or the economic analysis of law. If one employs economic (or any other) methodologies to resolve or guide decision making through, for example, cost-benefit analysis, then one inevitably faces difficult questions about what costs and benefits count. As described below, the spillovers theory raises these questions along the boundary noted above.

In this Article, I reengage this debate and the critiques I have mentioned, and explore the boundary between economic and other social theories of intellectual property. I begin with a brief discussion of the conventional economic theories of intellectual property. Next, I discuss the spillovers theory and various critiques, and reflect on a number of conceptual boundaries that surface in this discussion.

I. A BRIEF DESCRIPTION OF THE CONVENTIONAL ECONOMIC THEORY OF INTELLECTUAL PROPERTY

The basic economic justification for intellectual property rights is that exclusive rights provide the necessary incentives for private investment in creating intellectual resources.⁹ Information resources face a well-known supply-side problem common to public goods¹⁰: the inability to cheaply exclude competitors and nonpaying

8. I also disagree with her characterization of the spillovers idea as nothing more than “generalized reliance on ‘externalities.’” *Id.* at 1200-01; *see infra* Part II (overview of spillovers theory). Moreover, I am concerned (again, not surprisingly) with Cohen’s characterization of what the discipline “values most highly.” Cohen, *supra* note 6, at 1201. I must confess some exasperation with both the assumptions often adopted by and about economics. My exasperation is probably the result of straddling a difficult line and being pushed from both sides.

9. *See, e.g.*, ROBERT P. MERGES ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 119 (3d ed. 2003); Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1031 (2005).

10. On the public goods nature of intellectual resources (ideas, information, expression, and so on), *see* Frischmann & Lemley, *supra* note 2, at 272-73 and the sources cited therein; on how such resources generate different types of externalities, *see* Brett M. Frischmann,

consumers (free riders) presents a risk to investors perceived ex ante (prior to production), and this risk may lead to undersupply. Essentially, in the absence of intellectual property law, there would be a significant underinvestment in some types of intellectual resources because of the risk that competitors would appropriate the value of the resources. Granting intellectual property rights lessens the costs of exclusion, raises the costs of free riding, encourages licensing, and, as a result, allows the owner to appropriate a greater portion of the surplus generated by the production and distribution of intellectual resources.¹¹

Most economic analyses of intellectual property focus on tradeoffs associated with exclusivity.¹² Exclusivity is a supply-side concern that is relevant to assessing how well markets will function. IP rights improve the supply-side functioning of markets for intellectual products (inventions, works, and so on) as well as those markets further downstream for derivative commercial end products. Though each raises additional complications, the reward, prospect, and commercialization theories of IP¹³ all take IP-enabled exclusivity as the relevant *means* for fixing a supply-side problem. The theories differ largely in terms of where in the supply chain IP-enabled exclusivity is needed and the degree of control/exclusivity needed.

These theories assume that the market mechanism will best aggregate information regarding demand for such investment. Put in a slightly different way, the theories are premised on the notion that private investment in the production, development, and commercialization of IP subject matter will be allocated efficiently on the basis of expected returns in downstream commercial mar-

Speech, Spillovers, and the First Amendment, 2008 U. CHI. LEGAL F. 301, 310-21 [hereinafter Frischmann, *Speech*]; Frischmann & Lemley, *supra* note 2, at 258-61; on public goods and externalities generally, see, for example, RICHARD CORNES & TODD SANDLER, *THE THEORY OF EXTERNALITIES, PUBLIC GOODS, AND CLUB GOODS* 39-290 (2d ed. 1996).

11. See generally Stanley M. Besen & Leo J. Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSP. 3, 5 (1991).

12. This and part of the next paragraph are drawn from a prior essay. Brett M. Frischmann, *The Pull of Patents*, 77 FORDHAM L. REV. 2143, 2157-58 (2009).

13. See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 26-29 (2003) (reward); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 707-11 (2001) (commercialization); Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977) (prospect).

kets, so long as IP rights are available to provide the necessary exclusivity.¹⁴ This premise connects with the idea, articulated well by Harold Demsetz, that markets efficiently aggregate, process, and respond to information about what people want. In particular, the price mechanism provides a remarkably effective signal to producers about where to direct their investments.¹⁵

With a few exceptions,¹⁶ there is very little consideration of this contestable premise, and there is no alternative demand-side theory of what “Progress” we want.¹⁷ If we conclude that maximizing social utility is not the end, then market-based efficiency might not be the appropriate metric for evaluating resource allocation. In other words, if we reject maximizing utility as the overarching objective, then there is no dispositive reason to place trust in the market to effectively measure demand.¹⁸ Moreover, even if we stick

14. See, e.g., Kieff, *supra* note 13, at 720.

15. See Harold Demsetz, *The Private Production of Public Goods*, 13 J.L. & ECON. 293, 293 (1970); see also Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1 (1969); cf. PAUL GOLDSTEIN, *COPYRIGHT’S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX* 178-79 (1994) (making a similar point in the copyright context).

16. Scholars have identified demand manifestation problems in the context of reusers. See, e.g., Julie E. Cohen, *Copyright and the Perfect Curve*, 53 VAND. L. REV. 1799, 1812 (2000) (“Creators of these works cannot appropriate all of the value that they create, and so will tend to undervalue their uses of preexisting works.”); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1056-67 (1997) (explaining why reusers cannot pay the full social value of their use); Lydia Pallas Loren, *Redefining the Market Failure Approach to Fair Use in an Era of Copyright Permission Systems*, 5 J. INTELL. PROP. L. 1, 51-53 (1997) (same); cf. Julie E. Cohen, Lochner in *Cyberspace: The New Economic Orthodoxy of “Rights Management,”* 97 MICH. L. REV. 462, 498 (1998) [hereinafter Cohen, *Lochner in Cyberspace*] (“[T]here is no particular reason to believe that a new author’s ability to pay for the right to use an existing work is a good predictor of the quality of the eventual result, whether quality is measured in terms of market success or by some other standard.”).

17. For a postmodern approach to rethinking “Progress,” see Margaret Chon, *Postmodern “Progress”: Reconsidering the Copyright and Patent Power*, 43 DEPAUL L. REV. 97, 98 (1993).

18. In the United States, patent and copyright laws are generally seen as utilitarian, but it is important to recognize that intellectual property laws are not necessarily utilitarian, even in the United States. Utilitarianism is a very complicated branch of philosophy, but the complications do not matter here. Whatever version of utilitarianism one adopts, the common principle is that priority in ranking, (e)valuation, decision making, and so on is given to states of affairs that maximize the aggregate utility of society, when utility is measured by happiness, pleasure or desire fulfillment, or some other comparable measure. See JOHN STUART MILL, *UTILITARIANISM* 93-94 (Univ. of Chicago Press 13th ed. 1906) (discussing the “Greatest-Happiness Principle”). There is nothing about intellectual property that necessarily incorporates this basic principle of utilitarianism. The IP clause of the U.S. Constitution, for example, is surely instrumental; it links a goal (promoting “Progress of Science and useful Arts”) with a particular means (exclusive rights), but this does not make it utilitarian. U.S.

to utilitarianism, there are good reasons to question whether willingness to pay is a consistently effective mechanism for assessing demand when information systems are involved because of the prevalence of spillovers.¹⁹

The supply-side orientation of the economic theories coincides with more general economic theories of property and especially the idea that an important function of property rights is to internalize externalities. Drawing on earlier work, let me briefly explain the connections between externalities, markets, and property theory.²⁰

Externalities, whether positive or negative, are understood to be an important type of “market failure”—at times defined as the absence of a market.²¹ The perceived problem is that externalities generally are not fully factored into a person’s decision about whether and how to engage in an activity and consequently may have a distorting effect on market coordination and allocation of resources.²² That is, too few (many) resources may be allocated to

CONST. art. I, § 8, cl. 8. Put another way, the end of progress in science and the useful arts potentially could be, but certainly need not be, read to embody the central, driving normative objective of utilitarianism—maximizing utility (however measured). See Brett Frischmann, Capabilities, Spillovers, and Intellectual Progress: A New IP Consequentialism? (2009) (unpublished manuscript, on file with author) [hereinafter Frischmann, Consequentialism].

19. In a recent article, I challenged the notion that the price mechanism works effectively in contexts when consumers productively use intellectual products in ways that produce spillovers. See Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 670-71. One might argue that the market mechanism should be the default unless it can be shown that an alternative, such as the government, would outperform the market. Cf. Demsetz Reply, *supra* note 4, at 131. A comparative analysis would help to identify contexts in which one mechanism or another might perform best. Still, it is not clear, especially in the area of information systems, that we should choose the market mechanism as the default. Such a choice risks systemic bias or distortions that are not justified by mere reference to the generic advantages of decentralized decision making versus central planning. As Mark Lemley and I (and others such as Tim Wu) have argued, property rights can overcentralize decision making when compared with commons or semicommons regimes. See Frischmann & Lemley, *supra* note 2, at 282; Tim Wu, *Intellectual Property, Innovation, and Decentralized Decisions*, 92 VA. L. REV. 123, 125 (2005).

20. The next two paragraphs are drawn from Frischmann, *Speech*, *supra* note 10, at 301, 306.

21. See Kenneth J. Arrow, *The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Nonmarket Allocation*, in PUBLIC EXPENDITURES AND POLICY ANALYSIS 59, 67 (Robert H. Havemond & Julius Margolis eds., 1970) (defining externality as the absence of a functioning market).

22. CORNES & SANDLER, *supra* note 10, at 39-43; JAMES E. MEADE, THE THEORY OF ECONOMIC EXTERNALITIES: THE CONTROL OF ENVIRONMENTAL POLLUTION AND SIMILAR SOCIAL COSTS 15 (1973); Arrow, *supra* note 21, at 67-68.

activities that generate positive (negative) externalities because those persons deciding whether and how to allocate resources fail to account for the full range of benefits (costs). If those unaccounted-for benefits (costs) were taken into account—*internalized*—the actors might behave differently, for example, by reallocating their resources in a more efficient manner.²³

The distortion manifests on the supply side in terms of under-supply or, in dynamic terms, reduced incentives to invest in what would otherwise be optimal supply. Of course, as noted above, this problem can occur anywhere in the “supply chain.”²⁴ Note that observing the existence and measuring the magnitude of any distortion would depend on a counterfactual assessment of what would have been and generally assumes complete markets elsewhere in the supply chain.²⁵ Not surprisingly, empirical evidence measuring distortions in incentives caused by externalities (or free riding) is hard to come by.²⁶

23. On the other hand, actors might not behave differently. See James M. Buchanan & Wm. Craig Stubblebine, *Externality*, 29 *ECONOMICA* 371, 373-74 (1962); Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 665-68.

24. See *supra* note 19.

25. This is one of the problems with partial equilibrium analyses in general. See Glynn S. Lunney, Jr., *Copyright's Price Discrimination Panacea*, 21 *HARV. J.L. & TECH.* 387, 394 (2008).

26. Arguments about incentives often are framed in terms of “free riding” or strategic holdouts where people do not reveal their willingness to pay so they can free ride on others’ investments; these arguments are theoretical and often lack empirical foundation. See, e.g., Benjamin Coriat & Fabienne Orsi, *Establishing a New Intellectual Property Rights Regime in the United States: Origins, Content and Problems*, 31 *RES. POLY* 1491, 1492 (2002) (examining the free riding rationale); Lemley, *supra* note 9, at 1032 (same); cf. Keith E. Maskus, *The International Regulation of Intellectual Property*, 134 *REV. WORLD ECON.* 186, 187-88 (1998) (“The need for [intellectual property rights] arises from the fact that, without them, a piece of potentially valuable information would suffer from overuse.... This congestion problem, arising from free-riding behaviour, imposes the dynamic costs of limited cultural creation and product development, and reduced growth, on economies that fail to recognise it adequately.”); Eric von Hippel & Georg von Krogh, *Free Revealing and the Private-Collective Model for Innovation Incentives*, 36 *RES. & DEV. MGMT.* 295, 303 (2006) (“[W]hat can explain free revealing of privately funded innovations and enthusiastic participation in projects to produce a public good? ... [W]e should review the assumption in private investment models that free revealing of innovations developed with private funds will represent a loss of private profit for the innovator.”). The arguments surface at the intersection of intellectual property and antitrust, and are common in antitrust analysis of vertical arrangements. See, e.g., Warren S. Grimes, *The Sylvania Free Rider Justification for Downstream-Power Vertical Restraints: Truth or Invitation for Pretext?*, in *HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U.S. ANTITRUST* 181 (Robert

The distortion also manifests on the demand side in terms of lost signals about what consumers want and where investments should be directed. The lost signals characterization follows from the notion of externalities as missing markets or unpriced exchanges, and thus depends on the premise noted earlier about the correspondence between market and social demand.

To avoid distortions associated with externalities, the standard economic solution is to internalize the externalities by pricing the exchanges or enabling missing markets to operate. How is internalization accomplished? For some time, most economists accepted Pigou's view that the government ought to "intervene" via the tax or regulatory system and force externality-producing agents to fully account for their actions.²⁷ Thus, those who engage in activities that produce negative (positive) externalities, such as pollution (education), should be taxed (subsidized) at a level that takes into account external effects and thus aligns private and social costs (benefits).²⁸ In *The Problem of Social Cost*,²⁹ Coase challenged the Pigovian tradition and added *well-defined property rights* to the menu of options for dealing with externalities.³⁰ By definition (within economics), property rights are perfectly defined only in a world without externalities.³¹ Of course, the real world is not only afflicted with

Pitofsky ed., 2008); Marina Lao, *Free Riding: An Overstated, and Unconvincing Explanation for Resale Price Maintenance*, in HOW THE CHICAGO SCHOOL OVERSHOT THE MARK, *supra*, at 196; Daniel F. Spulber, *Competition Policy and the Incentive To Innovate: The Dynamic Effects of Microsoft v. Commission*, 25 YALE J. ON REG. 247, 249-78 (2008) (asserting forcefully and repeatedly but not measuring or empirically supporting the argument that incentives to invest will be dramatically impacted). The strategic holdout story works well in some contexts, but it depends too much on assumptions regarding deliberate strategic behavior, existing preferences, and complete markets to fully describe the public goods problem. *See infra* note 52.

27. A. C. PIGOU, *THE ECONOMICS OF WELFARE* 127-30, 229-31 (4th ed. 1932).

28. *See* CORNES & SANDLER, *supra* note 10, at 72-78; Buchanan & Stubblebine, *supra* note 23, at 381-82.

29. R. H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 19 (1960).

30. *See, e.g., id.*

31. In such a world, the range of "sanctioned behavioral relations among economic agents in the use of valuable resources" is completely and unambiguously delineated. *See also* Harold A. Demsetz, *Property Rights*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 144 (Peter Newman ed., 1998); Gary D. Libecap, *Contracting for Property Rights*, in PROPERTY RIGHTS: COOPERATION, CONFLICT AND THE LAW 142-67 (Terry L. Anderson & Fred. S. McChesney eds., 2003). As Gary Libecap explains: "In the limit, if property rights are so well defined that private and social net benefits are equalized in economic decisions, benefits and costs will be entirely borne by the owner," and thus there will be no externalities. Libecap,

transactions costs, but also is awash in imperfectly defined property rights and externalities.

As Harold Demsetz astutely observed in his seminal article, *Toward a Theory of Property Rights*,³² such real world imperfections create demand for property rights evolution. Demsetz took a different approach than Coase and advanced a theory of property rights evolution where imperfectly defined property rights improve and evolve to meet societal demand for the internalization of externalities, taking into account the costs and benefits of internalization.³³ According to Demsetz, “[e]very cost and benefit associated with social interdependencies is a potential externality,” and actual externalities exist when benefits or costs are not taken into account by interacting parties because “[t]he cost of a transaction in the rights between the parties (internalization) must exceed the gains from internalization.”³⁴ Transaction costs may be prohibitively high for a variety of reasons, including the number of people involved, problems associated with tracing benefits and costs to responsible actors, strategic behavior, and so on. Beyond transaction costs, however, loom tremendous institutional costs associated with defining, allocating, and enforcing rights.

The property theories described thus far are readily extended to the realm of intellectual property. Intellectual activities and goods of many different types generate externalities of many different types,³⁵ and the existence and persistence of such externalities, and thus nonexistence of potential markets, gives rise to demand for internalization mechanisms, such as intellectual property rights, and corresponding markets.³⁶ In a sense, the property theories reflect a more general statement of the supply-oriented IP theories described above.³⁷

supra, at 145.

32. Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967).

33. *Id.* at 348.

34. *Id.*

35. For an explanation of different types of externalities generated by the production, sharing, and use of ideas, see Frischmann, *Speech*, *supra* note 10, at 310-21; Frischmann & Lemley, *supra* note 2, at 258-61.

36. See HAROLD DEMSETZ, FROM ECONOMIC MAN TO ECONOMIC SYSTEM, 106-17 (2008); Demsetz, *Property Rights*, *supra* note 31, at 144; Demsetz Reply, *supra* note 4, at 129. I discuss this point further below. See *infra* note 39 and accompanying text.

37. See MERGES ET AL., *supra* note 9, at 119. Many intellectual property scholars have examined this connection. See, e.g., Cohen, Lochner in *Cyberspace*, *supra* note 16, at 464-66;

II. SPILLOVERS THEORY

Spillovers theory reflects a critical turn away from the economic theories discussed above. It attempts internal reform, so to speak, by aiming (1) to reject casual dismissal of spillovers (third party effects) that are not easily observed and quantified, (2) to bring attention to the value of identifying and supporting spillover-producing activities, (3) to show how certain types of nonrival resources can be leveraged to support such activities, and (4) to acknowledge and study the complex relationships between complex human and resource systems.³⁸ The gist of the spillovers argument is that society may be better off letting some externalities go without aiming to internalize them and, moreover, encouraging participation in activities that generate externalities (again, without aiming to internalize them completely). In the context of intellectual property law, society accomplishes those ends through a variety of legal arrangements that enable sharing and productive use of nonrival resources—in essence, *leveraging nonrivalry*.³⁹ The argument is complex and involves both supply and demand side arguments that I will not reiterate here.⁴⁰ In this Article, I focus on two points of contention: first, that externalities do not necessarily cause economic distortions, and second, that even when they do, the distortions may be welfare enhancing.

The first point is pretty straightforward, though often taken for granted. Claims, or worse, assumptions, that internalizing exter-

Gordon, *supra* note 1, at 617; Lemley, *supra* note 9, at 1031; Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283 (1996); Giovanni B. Ramello, *Intellectual Property and the Markets of Ideas*, 4 REV. NETWORK ECON. 161, 161-75 (2005).

38. See generally Frischmann & Lemley, *supra* note 2.

39. See Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 942 (2005) [hereinafter Frischmann, *Economic Theory*] (beginning to explore how nonrivalry can be leveraged); Frischmann, *Speech*, *supra* note 10 (same); Frischmann & Lemley, *supra* note 2 (explaining how nonrivalry can be leveraged to support capabilities); Frischmann, *Consequentialism*, *supra* note 18 (same).

40. See generally Frischmann & Lemley, *supra* note 2. Beyond the supply and demand-side arguments, we also explain why the distinction between “pecuniary” and “technological” externalities may collapse in the intellectual property context because what look like pecuniary externalities (or mere wealth transfers) in a static sense may be technological externalities in a dynamic sense. See *id.* at 262-64. Accordingly, throughout this Article, I do not distinguish between pecuniary and technological externalities.

nalities would necessarily lead to changes in behavior or resource allocation are overblown and not theoretically or empirically supported. Many externalities are simply “irrelevant.”⁴¹ Whether or not internalized by actors, the actors do not change their actions.⁴² To internalize or not to internalize is really a question of transferring wealth in such cases. Although distributional considerations might warrant policies that aim to limit or promote such transfers, efficiency considerations do not. Critically, this point places a significant limit on the supply-side rationale for internalization (that is, the perceived benefits of internalization) and the persistently overblown arguments about free riding and speculative diminution of incentives to invest.⁴³ It also connects with the empirical observations made by scholars that in many contexts, capturing value realized by others—through monetary returns or otherwise—is not necessary to support incentives to create because people prefer to create for their own reasons.⁴⁴

The second point is that even when internalization affects behavior, and thus the externalities are relevant, it may be best to leave externalities alone or even encourage their unmetered flow. It does not necessarily improve matters to internalize the externalities. Critically, this is so not just because the administrative and institutional costs of internalization may be high (though that may be the case sometimes), but also because the reallocation of benefits or costs accomplished by internalization may affect the behavior of other actors besides the internalizing actor.⁴⁵ This means that in

41. Buchanan & Stubblebine, *supra* note 23, at 371.

42. For further discussion and examples, see Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 660; Frischmann & Lemley, *supra* note 2, at 259-60. *See generally* Buchanan & Stubblebine, *supra* note 23.

43. *See supra* note 22 and accompanying text. *See generally* Lemley, *supra* note 9, at 1031-32.

44. Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513, 515 (2009) (“Psychological and sociological concepts can do more to explain creative impulses than classical economics. As a result, a copyright law that treats creativity as a product of economic incentives can miss the mark and harm what it aims to promote.”); *see, e.g.*, YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* 35 (2006) (providing examples such as noncommercial research institutes, volunteer software creators, and National Public Radio listeners and contributors); von Hippel & von Krogh, *supra* note 26, at 300 (discussing examples in open source software communities). *See generally* ERIC VON HIPPLE, *DEMOCRATIZING INNOVATION* (2005) (on user innovation).

45. Frischmann & Lemley, *supra* note 2, at 288 (“Fair use deems lawful some uses that

contexts involving incentive-relevant externalities, the benefits and costs of internalization must include not only impacts on internalizing actors but also impacts on third parties.

It may be the case that letting, or even encouraging, spillovers to flow to third parties may be worthwhile for society.⁴⁶ This is more likely when these third party beneficiaries are productive in ways that generate social benefits. Transforming third party beneficiaries into licensees who must pay to act may shift their behavior, reducing the intensity of their productive activity or causing them to act differently altogether, leading to reductions in the desired social benefits. This result is to be expected when licensees cannot capture the full value of their own activities—that is, when their activities generate positive third party effects. Under these circumstances, the licensees' private demand will fall short of social demand, a problem of demand manifestation. This problem may lead to market failure. It may lead to underparticipation in the spillover-producing activity and thus undersupply of the spillovers, or it may lead to optimization of the licensed input for a narrower range of uses than would be socially desirable.⁴⁷ Finally, it may have no impact other than to transfer wealth from licensee to licensor. The point is that we cannot simply assume the market mechanism will best aggregate demand information. Thus, we need a better theory of demand in such contexts.⁴⁸

When externalities are incentive relevant, the case for internalization depends, in part, on the degree to which all other markets are complete. Unless spillovers are internalized throughout society—which is impossible—the case for internalization in any particular context must somehow account for cascading effects in other dependent markets and many incomplete and missing markets, including nonmarket systems. Such accounting is quite difficult and requires considerably more attention to context, as discussed below.

Especially, but by no means exclusively, in the context of research, innovation, and cultural expression, it may be preferable to encourage cascading spillovers rather than damming the flows

yield benefits to third parties, not because the transaction costs ... are necessarily high, but rather to sustain the flow of spillovers to third parties.”).

46. WILLIAM J. BAUMAL, *THE FREE MARKET INNOVATION MACHINE* 121-23 (2002).

47. See, e.g., Frischmann, *Economic Theory*, *supra* note 39, at 939-41.

48. See *id.* (discussing this assumption).

upstream and pricing/coordinating everything downstream through the market mechanism. To be clear, the point made here (and elsewhere) is not that nothing should be priced and everything should be openly accessible and usable.⁴⁹ There are benefits and costs to both management/allocation regimes, and the benefits and costs vary for different resources along various dimensions. Moreover, legal systems can and often do mix the two regimes, allowing some uses of a resource to be allocated by the market and designating other uses to be open.⁵⁰

In fact, intellectual property systems do exactly this in order to enable some internalization and promote some externalities.⁵¹ Determining how to serve and balance these two functions depends on, inter alia, the types of intellectual resources (including supply characteristics such as production costs), types of resource uses (including consumption and productive activities that use the resource), and the nature of the relevant communities (including producers, users, and third party beneficiaries).

In his reply, Demsetz dismisses the two points noted above with two points of his own.⁵² First, he reminds us that “[i]t costs

49. In *Spillovers*, Mark Lemley and I explain the need for mixed regimes. See Frischmann & Lemley, *supra* note 2, at 275. Of course, the need to balance incentives and access is nothing new and has been a long-standing feature of intellectual property scholarship in general and the economic analysis of intellectual property in particular. Still, as we explain, the conventional account had some important deficiencies, including: (1) a tendency to overstate (or simply assume) that incentives to invest and supply increase with increased internalization, and thus ignore, inter alia, the “irrelevance” of some externalities and the diminishing returns in terms of incentives to further internalization; (2) acceptance of the premise that the price mechanism will best aggregate demand information; and (3) failure to explain adequately (at least, in our view) why it would be efficient for intellectual property laws to encourage the flow of spillovers. *Id.* at 266, 279.

50. See, e.g., Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 652-53.

51. For examples from copyright and patent, see Frischmann & Lemley, *supra* note 2.

52. Demsetz also attempts to refute my contention “that the market may fail to allocate resources efficiently in cases where consumer’s willingness to pay understates societal demand.” Demsetz Reply, *supra* note 4, at 131. First, he suggests that my contention concerns a “misrepresentation of private demands because of an operative free rider problem.” *Id.* This is not correct, however. My claim does not rest on strategic misrepresentation by a free rider seeking to avoid contributing to provision of a public good or the like. Of course, the classic strategic holdout story works well in some contexts, but it depends too much on assumptions concerning (1) deliberate strategic behavior, (2) existing preferences, and (3) completeness in dependent markets to fully describe the demand problem.

Second, Demsetz argues that “[t]here is no necessary inefficiency unless Frischmann provides alternative institutions (such as the State or the court) that can measure private demands more accurately and/or more cheaply than the market.” *Id.* I did not claim

something to internalize externalities, so internalization is not always efficient.”⁵³ This reminder is important because it reinforces Demsetz’s admonition that his property rights theory is positive and not normative.⁵⁴ Still, the reminder does not undermine the spillovers argument at all. If anything, Demsetz focuses attention on identification and evaluation of the full range of relevant costs and benefits, which is precisely the point of drawing attention to spillovers. Ultimately, Demsetz does not specify fully what costs should be taken into account, and he does not address the argument that creating a market may entail social costs above and beyond institutional costs associated with delineating and assigning rights and transaction costs associated with market exchange. The reason why relates to his second point.

Second, Demsetz maintains that externalities are really a product of the market because

[j]ust as the market dictates that there will be no good X if the cost of producing X exceeds what people are willing to pay for it, so the market dictates that there will be no market if the cost of producing the market exceeds what people are willing to pay for it.⁵⁵

“necessary inefficiency,” nor did I make a claim about comparative competence of one system or another in assessing demand. I claimed that markets may fail under conditions when licensees cannot capture the full value of their own activities. The State or courts are probably better suited to identify activities when such failures can be expected to be persistent, for example, as is arguably done in the fair use doctrine. See Frischmann & Lemley, *supra* note 2, at 287.

53. Demsetz Reply, *supra* note 4, at 131.

54. Demsetz takes me to task for my “somewhat reluctant infusing of [his] article with normative intent.” *Id.* at 127. In both *Spillovers* and the *Demsetzian Trend* articles, I note that Demsetz may not have intended to make the normative argument and that “much like the manner in which interpretations of Ronald Coase’s scholarship have taken his original insights in unintended directions, Demsetz’s property theory has likewise been extended to support normative arguments for increased propertization and privatization of valuable resources.” Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 651; Frischmann & Lemley, *supra* note 2, at 265 n.23. In his reply, Demsetz strongly rejects any normative intent and emphasizes that he had discussed how, for example, it can be efficient for property rights to evolve from private property to common property depending on the relevant costs and benefits. Demsetz Reply, *supra* note 4, at 129-30. *But cf.* Eduardo M. Peñalver, *Land Virtues*, 94 CORNELL L. REV. (forthcoming 2009) (manuscript at 8-9 n.17).

55. Demsetz Reply, *supra* note 4, at 131.

There are two problems with this argument, however. First, it equates supply and demand for property rights (or other internalization mechanisms such as regulation) with a market. Demsetz is right to say that supply and demand, or costs and benefits, may drive property rights evolution, but, as he stresses in his recent book, the process by which such evolution occurs in courts and other lawmaking institutions is not usually a market subject to the price system.⁵⁶ It is difficult to see how common law development of doctrines such as fair use can be characterized as markets subject to the price mechanism; I appreciate though that people may use “market for law” or perhaps even “market for doctrine” as a metaphor.

Second, even putting the previous problem aside, Demsetz’s argument ignores the fact that the participants in the various “markets” in question may themselves fail to appreciate the impact on third parties. Participants in the market for a market for X are not likely the same (complete set) as the participants in the market for X, nor are the third parties affected by the actions of either set of market participants the same. We cannot assume that everyone participates in each market or in some macro-market-for-potential-markets without simply assuming away the notion of third party effects altogether. So it seems we cannot really be confident that externalities (or the absence of a market) is an efficient product of the market system because the social value of having the market may exceed what people are willing to pay for it.

Externalities complicate, if not completely confound, various utilitarian economic models and theories.⁵⁷ This observation might be accepted only grudgingly by some economists, but it follows directly from the fact that many economic models and theories simply assume away externalities. Consider, for example, that much of the regulatory economics tradition rests on an assumption of no

56. See DEMSETZ, *supra* note 36, at 106-17 (noting that courts are not subject to price mechanism); see also Demsetz Reply, *supra* note 4, at 129-30 (noting that the processes by which rights evolution takes place are left unspecified by Demsetz and citing sources discussing this point); Frischmann, *Evaluating the Demsetzian Trend*, *supra* note 3, at 652-53 (acknowledging this point).

57. See, e.g., Jeffrey L. Harrison, *A Positive Externalities Approach to Copyright Law: Theory and Application*, 13 J. INTEL. PROP. L. 1, 7 (2005) (noting that, although IP law is utilitarian in nature, IP law makes it nearly impossible to adopt an economic approach to positive externalities).

externalities.⁵⁸ Those models, theories, or economists that do not assume externalities away often work with a subset of externalities that are easily identified and for which the “missing market” may be constructed or captured via some championed institutional fix. This is seen vividly in the utilitarian economic theories of intellectual property.

Critically, when externalities are difficult to identify or capture, these exact difficulties may preclude further consideration—if we cannot easily identify, much less measure, externalities, how should we go about integrating them into our models and analyses? How do we know which external effects count or how to choose or weigh them? Talking about externalities may seem akin to academic hand waving.⁵⁹

Nonetheless, spillovers matter and should not be dismissed so easily. Spillovers represent value in the form of positive third party effects. They are ubiquitous and a necessary consequence of an increasingly interdependent society.⁶⁰ That spillovers are difficult

58. Alfred Kahn wrote the seminal treatise on the economics of regulation, and it remains the foundational text. In the treatise, Kahn explicitly qualifies his analysis with the assumption that there are no externalities and notes that if that assumption is relaxed, much of the analysis may change. 1 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* 193-98 (Mass. Inst. of Tech. 1988). Essentially, the case for regulation (or more generally, government intervention in some form or another) is much stronger. Of course, this does not mean that the case is made—the case depends on the degree to which government intervention can improve matters.

I must note that I am baffled by the assumption of no externalities in some areas, like communications, where spillover effects associated with speech and information flows are rampant and arguably (should) define the relevant policy space. For example, it seems odd and quite troubling that the current network neutrality debate largely revolves around whether network owners have market power and whether discrimination among data packets causes anticompetitive effects. See, e.g., Barbara van Schewich & David Farber, *Point/Counterpoint: Network Neutrality Nuances*, COMM. ACM, Feb. 2009, at 31, 31-32 (making the same point). Framing the debate in this manner makes little sense: competitive markets do not solve the externality problems or guarantee an efficient allocation of resources; this is Economics 101. Of course, this does not mean that market power and anticompetitive effects do not matter—there are potential costs to regulation that *may* include, inter alia, anticompetitive effects, losses in consumer welfare, and diminution in incentives to innovate. Nor does it mean that recognizing the existence and importance of spillovers provides easy, determinate answers. The debate is and must be complicated and should not be focused myopically on a subset of issues.

59. Julie Cohen seems to have picked up on this line of argument in her critique. See *supra* notes 6-7 and accompanying text.

60. See BAUMAL, *supra* note 46, at 117.

to identify or capture only means we ought to pay much closer attention to their creation.⁶¹ We should ask:

- How are they created?
- Which activities generate spillovers?
- What conditions support these activities?
- What types of externalities are created?
- How are the externalities distributed to or realized by third parties?
- Do third parties *realize* costs and benefits *cognitively* with awareness and appreciation (and perhaps a willingness to pay if a market were to form), or are the costs and benefits realized more passively, taken for granted, or perhaps appreciated only vaguely?⁶²
- Can we differentiate among types of externality-producing activities and types of externalities in a manner that is relevant to decision making despite problems with quantification and measurement?

Attention to these questions presents fundamental challenges to an economic approach. Let me use an example to show why.⁶³

61. In his excellent book, *THE WEALTH OF NETWORKS*, Yochai Benkler made a very similar point: “Social production of goods and services, both public and private, is ubiquitous, though unnoticed. It sometimes substitutes for, and sometimes complements, market and state production everywhere. It is, to be fanciful, the dark matter of our economic production universe.” BENKLER, *supra* note 44, at 117.

62. This inquiry is related, but not identical, to the behavioral economics considerations of bounded rationality, decision-making heuristics, and the like. See *BEHAVIORAL LAW AND ECONOMICS* 59-209 (Cass A. Sunstein ed., 2000). In a sense, the inquiry is focused on identifying third party effects that are unknown and, to some degree, unknowable to the individual third parties and yet still identifiable when analyzed from a broader social perspective, perhaps by focusing on categories of conduct and activities that generate such effects and/or on nonrival resources that can be leveraged to generate such effects. Of course, designing institutions based on such an inquiry raises (1) a classic paternalism-elitism critique and (2) Demsetz’s concern about the comparative competence of market, government, and other institutions. Although I appreciate both types of criticism and acknowledge the need to keep them in mind, I do not believe either altogether undermines the inquiry or effort to design institutions based on it. On (2), see Demsetz Reply, *supra* note 4, at 128 (“[M]uch of what I wrote [in my 1967 article] is focused on the externality problem, but the general concern is with the efficiency of social arrangements. Circumstantial changes that make existing inefficiencies more serious ... will prompt appropriate revisions of ownership rights.”). On (1), I will just say (for now) that the critique only gets you so far, unless you are a firm believer in libertarianism, which I am not.

63. The rest of this paragraph and the next two paragraphs are drawn from an essay. See Frischmann, *Speech*, *supra* note 10, at 313-16 (footnotes omitted). The essay explains in

Consider speech, an expressive, communicative activity that shares ideas and regularly generates externalities. Speech often has dynamic and systemic implications that are unanticipated and underappreciated by speakers and their audiences. The effects may be small in magnitude and may not be immediately salient to the speaker or audience. This is probably the case for the vast majority of speech. Nonetheless, we should expect the aggregate impact across many participants in many conversations to be substantial, for two reasons. First, and perhaps most obvious, small external effects add up as speech, information, and ideas propagate widely across communities. Second, sometimes the unanticipated and underappreciated effects of communicated ideas turn out to be quite large in magnitude. Yet, for a variety of well-understood reasons, it is not easy to “pick winners,” to foresee or even recognize early on those “killer ideas” that yield substantial social value, occasionally through systemic change.⁶⁴

Consider, for example, the speech of a nonprofessional blogger pertaining to some political issue, for example, the Iraq War, civil rights, or property tax reform.⁶⁵ The speech may have external effects beyond those who write, read, or comment on the blog itself because the speech—the ideas and information communicated—may impact awareness and opinion within the community affected by the political issue being discussed, and perhaps the speech may ultimately affect political processes. The likelihood that any particular speaker will have a noticeable impact may be small, but that is beside the point.⁶⁶ Society benefits when its members participate because of the aggregate effects, and there is a persistent risk of underparticipation in the process and of underproduction of the speech. Speech affects community systems and community mem-

considerably more detail how speech shares ideas and generates different types of externalities.

64. See THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* 52 (1962).

65. Consider, for example, the role of blogs in revealing flaws in electronic voting machines, mobilizing activists, and enabling public scrutiny and debate. See BENKLER, *supra* note 44, at 217-25; Daniel W. Drezner & Henry Farrell, *Web of Influence*, *FOREIGN POL'Y*, Nov.-Dec. 2004, at, 32, 32-33; Kevin Wallsten, *Agenda Setting and the Blogosphere: An Analysis of the Relationship Between Mainstream Media and Political Blogs*, 24 *REV. POL'Y RES.* 567 (2007).

66. It is beside the limited point I am making. I use this example only to show how the external effects may occur and not to support an empirical claim.

bers, even community members who do not participate in the conversation.⁶⁷

The external effects from speech are not limited to political systems. Speech externalities are often due to complex interdependencies between communication-information systems and other complementary human systems that depend upon speech inputs—we can attach many different labels to describe these systems including cultural, economic, educational, political, social, and so on.

Analytically, the challenge in employing economics derives from the difficulties in capturing benefits and costs realized in noneconomic systems (but caused by or at least related to actions in economic systems). Are the cultural or political benefits one realizes only passively because the benefits are a result of the actions of others even cognizable within economics? I believe so.⁶⁸ Yet Anne Barron, in a thoughtful critique, suggests that Mark Lemley and I necessarily venture beyond economics in our attempt to incorporate such values into an economic theory of intellectual property.⁶⁹ In her view (and perhaps others'), these sorts of benefits and costs are strictly noneconomic. If the values are not reflected in preferences or do not register with a person directly triggering a willingness to pay, then the values will not be reflected accurately in markets—which is the demand manifestation point, of course.⁷⁰ If identifying and giving weight to such values necessarily takes one outside of economics, then so be it—that is a boundary that must be crossed.

But I am not so sure it does. Economists of many stripes within many different fields (or subdisciplines) of economics recognize the existence and importance of social values not reflected in (existing) preferences or markets.⁷¹ As I discuss below, the argument seems to

67. See, e.g., Frischmann, *Economic Theory*, *supra* note 39, at 1017-20.

68. I discuss such values from an economic perspective in most of the articles I have written.

69. See Barron, *supra* note 5, at 9, 18.

70. *Id.*

71. See, e.g., A PRIMER ON NONMARKET VALUATION (Patricia A. Champ et al. eds., 2003) (nonmarket goods); CORNES & SANDLER, *supra* note 10 (various public and nonmarket goods); A. MYRICK FREEMAN III, THE MEASUREMENT OF ENVIRONMENTAL AND RESOURCE VALUES: THEORY AND METHODS 6-9 (2d ed. 2003) (environmental resources); AMARTYA SEN, DEVELOPMENT AS FREEDOM 3 (1999) (capabilities); Kenneth J. Arrow, *Observations on Social Capital*, in SOCIAL CAPITAL: A MULTIFACETED PERSPECTIVE 3 (Partha Dasgupta and Ismail Serageldin eds., 2001) (social capital); Richard A. Musgrave, *Merit Goods*, in 3 THE NEW

rest to some degree on a conception of economics rooted in a narrow version of cost-benefit analysis. Among other things, this narrow conception (1) substitutes Kaldor-Hicks efficiency for Pareto optimality;⁷² and (2) for the sake of determinacy, modeling convenience, or other reasons, disregards or makes simplifying assumptions about information and effects that are difficult to observe, quantify, value, and/or monetize. Critically, this is not a position shared by all, or even most, economists. The position has been critiqued extensively by economists and noneconomists alike and is the topic of a rich and voluminous literature.⁷³

Interestingly, Barron also suggests that my approach is in accord with Demsetz's economic approach because, according to her, I admit that cost-benefit analysis is appropriate but argue that certain costs of internalization are overlooked.⁷⁴ Perhaps she is right. To date, I have worked with utilitarian economics and attempted to shed light on the social costs not well accounted for in the conventional economic theories of intellectual property. The difficulty is deciding what social costs count in the cost-benefit analysis, and relatedly, whether, and if so how, systemic costs

PALGRAVE: A DICTIONARY OF ECONOMICS 452-53 (John Eatwell et al. eds., 1987) (merit goods); Emile Quntet, *Valuations of Environmental Externalities: Some Recent Results*, in INFRASTRUCTURE AND THE COMPLEXITY OF ECONOMIC DEVELOPMENT 271 (David F. Batten & Charlie Karlsson eds., 1996) (infrastructure).

72. See EDWARD J. MISHAN & EUSTON QUAH, COST-BENEFIT ANALYSIS 104 (5th ed. 2007) (discussing Kaldor-Hicks efficiency criterion).

73. See generally GARY STANLEY BECKER & KEVIN M. MURPHY, SOCIAL ECONOMICS: MARKET BEHAVIOR IN A SOCIAL ENVIRONMENT 8 (2003) ("Economists usually assume that utility functions depend either directly on the goods and services consumed, or on household commodities produced with time and purchased with goods and services. Social forces are either ignored or left to lurk in the background as part of the general environment."); Ana Bedate, Luis César Herrero & José Ángel Sanz, *Economic Valuation of the Cultural Heritage: Application to Four Case Studies in Spain*, 5 J. CULTURAL HERITAGE 101 (2004); Arne Risa Hole, *A Comparison of Approaches to Estimating Confidence Intervals for Willingness To Pay Measures*, 16 HEALTH ECON. 827 (2007); Daniel Kahneman, Ilana Ritov & David Schkade, *Economic Preferences or Attitude Expressions?: An Analysis of Dollar Responses To Public Issues*, 19 J. RISK & UNCERTAINTY 203 (1999); Paul R. Portney, *The Contingent Valuation Debate: Why Economists Should Care*, 8 J. ECON. PERSP. 3 (1994); A.L. Toivonen et al., *The Economic Value of Recreational Fisheries in Nordic Countries*, 11 FISHERIES MGMT. & ECOLOGY 1 (2004); Olav Velthuis, *Symbolic Meanings of Prices: Constructing the Value of Contemporary Art in Amsterdam and New York Galleries*, 32 THEORY & SOC'Y 181 (2003) ("I interpret the price mechanism as a symbolic system. Despite the impersonal, businesslike connotations of prices, I argue that actors in markets manage to express a range of cognitive and cultural meanings through them.").

74. See Barron, *supra* note 5, at 25.

(associated with foregone spillovers) that are difficult to observe and measure enter into the analysis.

These concerns are remarkably similar to those faced in environmental economics with respect to ecosystems and other “nonmarket values.”⁷⁵ We know, without a doubt, that ecosystems generate substantial social value through many different types of ecosystem functions and ecosystem services; we also know, without a doubt, that we fail to appreciate fully this value.⁷⁶

Valuing and managing environmental resources is extremely difficult. We tend to take for granted the environment within which we live; our own preferences and values fail to appreciate the complex interdependencies between ourselves, our environment, and others. Consequently, our decisions about how to manage our own interactions with the environment are not likely to be social welfare maximizing. The environment persistently contributes to our well-being, but most often it does so only indirectly. We rarely pay directly for its benefits, and so when it comes down to individual preferences or valuation—for example, preferences measured in terms of willingness to pay or revealed through our actions—it should not be surprising that we persistently undervalue the environment, in terms of its contributions to our own well-being (and putting aside notions of intrinsic value).⁷⁷

75. See, e.g., DAVID M. DRIESEN, *THE ECONOMIC DYNAMICS OF ENVIRONMENTAL LAW* 11 (2003) (questioning the adequacy of the approach of Chicago School economics and advocating an Economic Dynamics analysis); Douglas A. Kysar, *Climate Change, Cultural Transformation, and Comprehensive Rationality*, 31 B.C. ENVTL. AFF. L. REV. 555, 558 (2004) (concluding efficiency cost-benefit analysis is an unacceptably crude device for guiding policy and citing academics critical of such cost-benefit analyses and proponents of other methods).

I develop the argument made in this paragraph in more detail in a recent article. See Brett M. Frischmann, *Environmental Infrastructure*, 35 *ECOLOGY L.Q.* 151, 170 (2008).

76. See Gretchen C. Daily et al., *The Value of Nature and the Nature of Value*, 289 *SCIENCE* 395, 395 (2000) (discussing the difficulties of valuing ecosystem assets and noting that “[o]ften, the importance of ecosystem services is widely appreciated only upon their loss”).

77. See DRIESEN, *supra* note 75, at 11; MILLENNIUM ECOSYSTEM ASSESSMENT, *ECOSYSTEMS AND HUMAN WELL-BEING: SYNTHESIS*, at v-vi (2005), available at <http://www.millenniumassessment.org/documents/document.356.aspx.pdf>; Daily, *supra* note 76, at 395; Frischmann, *Environmental Infrastructure*, *supra* note 75, at 163; Kysar, *supra* note 75, at 589; J.B. Ruhl & James Salzman, *The Law and Policy Beginnings of Ecosystem Services*, 22 *J. LAND USE & ENVTL. L.* 157, 157 (2007); James Salzman, Barton H. Thompson, Jr., & Gretchen C. Daily, *Protecting Ecosystem Services: Science, Economics, and Law*, 20 *STAN. ENVTL. L.J.* 309, 311 (2001) (discussing “[o]ur unthinking reliance on ecosystem services”).

Of course, we have limited resources and necessarily make tradeoffs in policy, economics, and other decisions. As a result, environmental law and policy depends heavily on economic analysis of these tradeoffs and cost-benefit analysis.⁷⁸ Some argue that it is better to identify and attempt to value ecosystem services because assigning some value is better than assigning no value.⁷⁹ Others argue that such comfort is misplaced because it accepts the analytical paradigm of cost-benefit analysis and provides a false sense of security that ecosystems are being sufficiently valued and protected.⁸⁰ (This is very similar to the debate about the use of economics in intellectual property.) Although the debate is ongoing, it is important to recognize that this is a debate about the use of cost-benefit analysis in framing and making environmental policy decisions and does not suggest that the economics discipline only recognizes value reflected in existing preferences. In fact, it is well understood within environmental economics that aggregating individual preferences is a poor proxy for the social value of many environmental resources.⁸¹

This highlights where Anne Barron's and Harold Demsetz's critiques potentially converge. Barron, quoting Demsetz, states:

Demsetz regards it as simply meaningless to say that there is something called a societal benefit or cost that is separable from private benefits and costs without relinquishing the fundamental premise of modern economics, which is that "social cost and social benefit are, respectively, summations of privately borne cost benefits."⁸²

78. See, e.g., DRIESEN, *supra* note 75, at 15-16; Kysar, *supra* note 75, at 587.

79. See generally James Salzman, *Valuing Ecosystem Services*, 24 *ECOLOGY L.Q.* 887 (1997).

80. See Kysar, *supra* note 75, at 557 (discussing the deceptive lure of cost-benefit analysis's comprehensive rationality).

81. See DRIESEN, *supra* note 75, at 21 ("Our view of what society should be like reflects more than the aggregate of our individual desires as consumers. It reflects a combined version of our values and interests."). Douglas Kysar elaborates on the inadequacies of preferences in the context of environmental law. See Kysar, *supra* note 75, at 586; see also DRIESEN, *supra* note 75, at 20-22 (critiquing cost-benefit analysis's use of aggregating preferences in the context of policy goals). Both authors provide ample citations to the literature.

82. Barron, *supra* note 5, at 28 n.100.

As I understand Demsetz, he means to invoke only the basic utilitarian premise that social welfare is the sum of aggregated individual utilities, in which case, there is no real conflict.⁸³ Mark Lemley and I do not commit ourselves “to the view that social welfare is not reducible to the aggregate of private utilities.”⁸⁴ We take a utilitarian approach but critically examine the degree to which and manner in which certain types of benefits and costs are created and borne by individuals in an interdependent society. As discussed above, we emphasize the importance of recognizing that spillovers are ubiquitous (that is, there are many incomplete and missing markets), that spillovers flow across and within various interdependent systems in ways that are not easily observed, appreciated and quantified, and therefore that private demand necessarily will fall short of social demand in many contexts.

CONCLUSION

Understanding the role of law in regulating and promoting different externality-producing activities requires the study of interdependencies among people, resources, and actions within and across complex nested systems, including cultural, economic, and political systems.⁸⁵ Of course, it also requires the comparative

83. At least, not with the approach I have taken so far. In a work-in-progress, I have begun to explore a nonutilitarian consequentialist approach that would in fact recognize social value separable from private utility. See Frischmann, Consequentialism, *supra* note 18; see also Cohen, *supra* note 6, at 1159-62 (discussing forms of consequentialism relevant to IP discourse, calling for a more complex consequentialism, and focusing on the capabilities approach of Amartya Sen and Martha Nussbaum as a decent candidate).

84. Barron, *supra* note 5, at 26 n.92. To be fair, Barron suggests that we “seem to be committing [our]selves to th[is] view,” based on our claim that internalizing externalities is not the “silver bullet that magically aligns private and social welfare.” *Id.*

85. To date, I have attempted to identify conditions when persistent flaws in demand manifestation associated with user generated spillovers provide justifications for sustaining commons in (or common access to) nonrivalrously consumed capital resources (“nonrival capital”). What emerges from my prior work is admittedly inconclusive, nuanced, and both context- and resource-specific in terms of its prescriptions. Even with respect to the subset of nonrival capital for which commons management seems most appealing—*infrastructural capital*—my prescriptions become tangled up in the contextual details, such as:

- the type of infrastructural resource;
- the degree to which it is purely nonrival (ideas) or partially nonrival (congestible);
- the types of user activities the resource potentially supports;
- the types of outputs those activities potentially generate; and
- the types and scope of externalities generated.

analysis of legal institutions created by people to regulate their actions with respect to each other and the resources that comprise their environment. This is a complex task. Again, I do not believe this task is *necessarily* beyond the reach of economics and reliant on another social theory, as Barron suggests. But it could be (depending on how one defines economics and its boundaries), and it would be a mistake, in my view, to ignore the intersections between economics and other social theories, methodologies, and disciplines. These are boundaries that I hope to explore more in the future.

Getting tangled in these nuances is preferable, in my view, to ignoring them or adopting simplifying assumptions, and it is inevitable given the cross-disciplinary reach of the analysis; the details vary considerably across resource types (communications facilities, environmental resources, ideas, and so on).