HELLER'S GRIDLOCK ECONOMY IN PERSPECTIVE: WHY THERE IS TOO LITTLE, NOT TOO MUCH PRIVATE PROPERTY

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This Article critiques Michael Heller's important contribution in The Gridlock Economy. *At no point does this Article take the position that gridlock, or the associated anticommons, is not a serious issue in the design of a legal system. But gridlock is not the major source of social dislocation; nor is private ownership the major source of gridlock. More concretely, this Article examines the other important sources of economic distortion that are unrelated to economic gridlock from private action. These include the use of excessive government subsidies (as with health care); misguided government licenses (as with broadcast licenses); the unwise use of government power to create gridlock situations (as with employment law); the excessive role of government permitting (as with real estate development); and the use of creative private techniques to overcome gridlock (as with patent licensing as a way to combat the patent thicket). Thereafter, this Article explains how traditional common law rules did a better job of controlling for gridlock than many current initiatives, by narrowly defining the class of actionable harms to exclude competitive loss, blocked views, and hurt feelings. It closes with an explanation of how broad definitions of harm slow down decisions in the public sector, thereby impeding the use of the eminent domain power that could otherwise respond to gridlock issues.*

INTRODUCTION

The topic of this conference is Michael Heller's provocative new book, entitled *The Gridlock Economy*.[1] The central thesis of the book is that one critical obstacle to overall social advancement is the fragmentation of property among private owners that prevents its coherent assembly for projects that are desired by all but achievable by none. There is no question that, more than anyone else,

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1. MICHAEL HELLER, THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES (2008).

Heller has put this topic on the map in its current form, chiefly through two earlier academic articles which have had immense influence on the field.[2] The ability to introduce into the mature field of law and economics even a single new generative term, the anticommons on which *The Gridlock Economy* is based, is a major intellectual achievement. What makes this accomplishment so noteworthy is that it now seems obvious—but only after the fact. The question of holdout has long been on the agenda, but the ability to link this problem up with the issue of overconsumption of shared resources—or commons—opens up previously unappreciated avenues for research. We thus know that with any standardized models, the losses that come from excessive fragmentation of productive assets, or tragedies of the anticommons, are equal to those which come from the excessive use of common resources over which there are no clear property rights, or tragedies of the commons.[3] Today, no assessment of complex social institutions and practices can be undertaken without thinking about its anticommons implications. Gridlock is here to stay; not only in discussions about traffic, but also in those about the economy writ large.

But wherein lies the source of this gridlock? Heller's subtitle offers us one possible answer: *How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*.[4] Sometimes, the strong protection of private property rights is a source of genuine economic stagnation and dislocation. However, any close examination of the issues reveals one larger truth that lacks the attention-grabbing character of Heller's title. In most settings, the weak and indefinite property rights system is the source of the gridlock that he rightly deplores. We do not need another indignant attack on the vulnerable institution of private property. We need a greater appreciation of how unbridled government power does just what Heller says: "wrecks markets, stops innovation, and costs lives."

The purpose of this critique of Heller is to illumine the true sources of the gridlock problem. In so doing, I hope to avoid moving to the alternative scheme of insisting that private property is the "be-all and end-all" of sound, legal regulations of the economy. Quite the contrary, for many years I have taken the position that we can identify an optimal mix of private and public property, one that is often achieved by customary practices that arise out of the countless actions of unrelated individual persons, but which sometimes depend on state action for reliable implementation. The fundamental trade-off that has to be made in all cases lies in balancing the holdout problems that drive the formation of the gridlock economy and the exclusion problems that arise under any private property arrangement.[5]

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2. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (1998); Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998) (discussing its application to patents).

3. *See, e.g.*, James M. Buchanan & Yong J. Yoon, *Symmetric Tragedies: Commons and Anticommons*, 43 J.L. & ECON. 1, 3–5 (2000) (modeling the formal "symmetry" between overutilization and underutilization).

4. HELLER, *supra* note 1.

5. *See* RICHARD A. EPSTEIN, PRINCIPLES FOR A FREE SOCIETY: RECONCILING INDIVIDUAL LIBERTY WITH THE COMMON GOOD 251–78 (1998); Richard A. Epstein, *On the Optimal Mix of Common and Private Property*, 11 SOC. PHIL. & POL'Y 17, 20 (1994).

The proper balance cannot be determined in the abstract, but rather requires a close look at the nature of a particular resource to figure out what system of rights maximizes the value in using that resource. Stated in this fashion, it becomes clear that gridlock is only one important piece of the overall puzzle. Gridlock neither displaces nor subsumes the other institutional or social problems that stand in the path of efficient resource allocation.

It is important to stress at the outset one assumption that Heller and I share: we both think that, by and large, competitive markets offer the best hope for social prosperity and technological advancement. That is why his indictment insists that too much ownership "wrecks [competitive] markets," which are, by implication, a good thing. Indeed, Heller is surely correct in thinking that a need for efficient and responsive markets generates a grim view of the holdout problems that arise when property rights are configured in ways that do not facilitate high rates of transactions, relative to transaction costs. It is therefore appropriate to begin this Article with a recapitulation of the reasons to fear gridlock in social relations.

Once the reasons to fear gridlock are presented, however, it is necessary to put them into perspective, for Heller overplays their severity. More concretely, Heller makes at least five interrelated mistakes in *The Gridlock Economy*. He tends to either downgrade or ignore other sources of distortion in the economy. First, he ignores the *free-fall* economy that arises from unwise government subsidies that produce extensive economic distortions. Second, he tends to misclassify issues as gridlock problems when their genesis lies elsewhere. In this instance, the chief error comes in his account of the evolution of property rights in the broadcast spectrum. Third, he ignores key situations where government power is used to create gridlock, not end it. Employment relations, in both nonunion and union contexts, are the dominant source of this problem. Fourth, he tends to ignore the dangerous role that excessive government permitting plays in throttling effective economic development. The use of natural resources such as land and water, for example, suffers grievously from such permitting. Lastly, even when gridlock does occur due to some distinctive configuration of private property, Heller underrates the tools that are available to control that risk. Intellectual property law offers some instructive illustrations.

I. WHY GRIDLOCK?

Early on in *The Gridlock Economy*, Heller sets out, complete with a map, the gridlock that developed with respect to transportation over the Rhine River during the late Middle Ages.[6] Rivers were, as a matter of both Roman and common law, common property to which all had access and over which no one person could exercise dominion.[7] The logic behind this was that the value of the

6. HELLER, *supra* note 1, at 3 & fig.1.1.

7. JUSTINIAN'S INSTITUTES 2.1.1–5 (J. Moyle trans., 5th ed. 1913) ("[A]ll of these things are by natural law common to all: air, flowing water, the sea and, consequently, the shores of the sea."). This persists to the modern day in the doctrine of the navigation servitude. *See* THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY: PRINCIPLES & POLICIES 308–13 (2007).

river lay in its "going concern" *as a river* in which multiple, simultaneous uses were possible, only one of which was private consumption. One of the desired uses was transportation down the river, which requires property rights of a sort—"rules of the road"—that allow traffic to move efficiently in a crowded space. But, in early times, letting anyone use the river maximized its value for transportation, especially when the use levels were sufficiently low that crowding and pollution did not require public expenditures. The elaborate construction of toll stations along the Rhine River was a mortal threat to commerce along the river. But it is critical to note that they were not created by private action, nor validated by any conception of private or customary law. Rather, the proliferation of tollbooths laid in the fragmented state of *political* power in Germany at the time, which was controlled by local princes, not a single national government.[8] Indeed, in medieval times, the distinction between the prince as owner of property and as sovereign was not as clear as it has become today. But it is clear that all gridlock along the Rhine must be chalked up to the high politics of rival sovereigns, not petty disputes of rival owners. The point is evident from the Treaty of Westphalia, which identifies the relevant parties in its full title: "Treaty of Westphalia: Peace Treaty Between the Holy Roman Emperor and the King of France and Their Respective Allies."[9] The successful political resolution under the Treaty of Westphalia, moreover, unlocked the use of the Rhine to support extensive commercial traffic by resorting to the customary law that preceded government interventions, which is evident from the Treaty's own language: "and the antient Security, Jurisdiction and Custom, such as have been long before these Wars in use, shall be re-establish'd and inviolably maintain'd in the Provinces, Ports and Rivers."[10]

A simple game-theoretical evaluation provides some estimation of the undeniable magnitude of the gridlock problem. Each sovereign acts on its own initiative and cares only for its own well-being. Putting a tollbooth across the Rhine allows it to raise revenues that it could not collect if it just let the traffic go by.[11] It also cuts down on the volume of the traffic, so that overall use of the river is lower than it was before. The individual duchy or potentate, moreover, does not take into account any impact that the loss in traffic will have on upstream and downstream owners. These parties, of course, have the same option as the original party; they can each put a tollbooth across the river and charge fees. Each party, in turn, gains from its action but inflicts costs on others of greater magnitude. There were thirty toll bridges or so across the Rhine. Suppose each one would allow an owner a one-time increment to income from his own toll operation of 15%, but expose all other castle owners to a 5% loss of existing stock so that in the end,

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8. Roy Gardner, Noel Gaston & Robert T. Masson, *Tolling the Rhine in 1254: Complementary Monopoly Revisited* 2–6 (Ind. Univ. Discussion Paper, 2002), *available at* http://www.indiana.edu/~workshop/papers/gardner_102802.pdf.

9. Treaty of Westphalia, Holy Rom. Emp.-Fr., art. LXIX, LXXXIX (Oct. 14, 1648), *available at* http://avalon.law.yale.edu/17th_century/westphal.asp.

10. *Id.* art. LXIX. The Treaty itself explicitly prohibits tolls in two sections. *See id.* art. LXIX, LXXXIX.

11. I ignore alternative gains that could have been captured by selling goods and services to the river traffic.

each party gets 0.15 – (29)0.05, which measures the loss from a 5% decrement on 29 repeat plays, for an overall loss to each player of 1.3, which sums to a total loss for all 30 players of 39 units. It is clear, even without the math, that the cumulative loss leaves all owners worse off after the game has run its course than if no tolls had been imposed at all. After all, each blockader would find it impossible to ship its own goods any distance along the river. So we have an n-person prisoner's dilemma game in which defection triumphs when cooperation is desperately needed.

There is, however, nothing about the basic problem that depends upon the physical configuration of this or that river. Modern markets also have complex distribution chains, and it is more than coincidence that in these settings we speak of upstream and downstream parties. The reasoning is the same as with the Rhine example. If each party holds a monopoly position over its stage of production, the effort to extract sequential monopoly rents leads to a virtual shutdown of the entire market because of the cumulative impact of successive noncooperative behaviors. Technically speaking, these conditions generate what is termed a *double-marginalization problem*. The math is not important, but the consequences are. Even just two sequential monopolies can result in huge social losses, relative to a single monopoly. Additional stages of potential blockade further compound the problem. However, the economic response is one of vertical integration, whereby multiple firms become one. At that point, both the monopolist and the consumers are better off than they were before. Put another way, whenever the factors of production are arrayed *in series* (one after another, like electrical circuits), the risk of blockades requires some kind of collective response. The greater the number of parties, the greater the risk that is faced.

The increase in the number of parties takes on a very different significance when the parties do not operate in series like the castles on the Rhine, but *in parallel*, such that each one becomes a substitute source of production or service to the others. Now, the correct response is "the more the merrier." To see how this works, assume that the only question is how to get from one side of the Rhine to the other. Assume further that these same castles each control one bridge over the river. Now, the closer the proximity of these bridges and the greater their number, the more *efficiently* the market operates, because each bridge offers an additional substitute for the others. The only locational advantage that one bridge has over another is the differential cost of transportation from any given location to any given bridge. It follows that the calculations made above go into reverse. Now, the greater the number of bridges, the more competitive the market. There is, of course, no duty to compete, but with free entry we should expect a realization of all the gains obtainable from expanding the range of market options. Gridlock poses problems that competitive markets solve, but everything depends on how the resources are arrayed.

II. THE FREE FALL ECONOMY

Gridlock may be one important problem, but it is not the only impediment to the sound operation of competitive markets. A second distortion in markets comes not from paralysis, but from *excessive* consumption wrought by unprincipled subsidies doled out by government agencies. This problem is best

understood as the inverse of a gridlock problem. Far from being caught in a traffic snarl, the "free-fall economy" runs downhill at ever-greater speeds without the benefit of the brake normally supplied by the price system in a well-functioning market. The normal competitive processes are distorted by government intervention reducing the costs of production. The result of this subsidy is excessive production of certain goods, at least until the market collapses when the extra demand is no longer sustainable.

The instances of this mistake are not insignificant. Consider just three: Medicare and Medicaid, the ethanol fiasco, and the subprime crisis. The most salient feature about Medicare and Medicaid is their inexorable increase in costs, which is hardly a sign of a blockade tying up needed health care resources. Rather, the age-old question is how to limit demand for goods sold at or near a zero price. Medicare generates this problem in how it prices goods to eligible members, who typically must be over sixty-five years old. To be sure, there are some modest fees for access to medical services, but these are insufficient to cover the entire cost. In the case of Medicare Part B, the enrollee's fees for professional services cover about 25% of the total bill, which implies a huge subsidy.[12] Worse still, the program is structured as a lump sum payment, independent of age and risk, so that the marginal cost for additional units of medical services is close to zero. Using non-price techniques to ration care—limiting the choice of physician and blocking access to certain types of treatment—generates a huge public uproar, so that the various short-term reform strategies of cost containment are quickly overwhelmed. Gridlock is not the issue—free-fall is.

Similarly, the huge booms and busts in the ethanol markets are not a function of gridlock. Their occurrence is a function of the free-fall economy driven by large subsidies for using ethanol as a fuel. These subsidies have distorted international trade markets, as American producers have been largely successful in getting Congress—that paladin of free markets—to impose heavy tariffs on foreign importation in order to preserve a free field to American producers.[13] It is unclear whether Heller classifies tariffs as an element in gridlock. Regardless, the resultant malaise is surely not the consequence of "too much ownership." However classified, tariff protection from foreign competition has led to systematic shortages in the grain supply used for food in the domestic and export markets[14]—before the sector was devastated in the financial meltdown which had its origins in the subprime crisis.

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12. "This 25–75 [coverage] ratio . . . applies generally to persons who enroll in Medicare Part B to get coverage of doctors' fees, diagnostic tests, and other outpatient services." Richard L. Kaplan et al., *Retirees at Risk: The Precarious Promise of Post-Employment Health Benefits*, 9 YALE J. HEALTH POL'Y L. & ETHICS 287, 345 (2009) (citing 2009 MEDICARE HANDBOOK § 6.02[C][1], at 6–10 (Judith A. Stein & Alfred J. Chiplin, Jr. eds., 2009)).

13. For a critical take on the politics, see Kevin Allison & Stephanie Kirchgaessner, *From Hope to Husk*, FIN. TIMES, Oct. 22, 2008, at 9.

14. For impacts of the increased production of biofuels on the food crisis, see *Rising Food Prices: Policy Options and World Bank Response*, WORLD BANK (2008), http://siteresources.worldbank.org/NEWS/Resources/risingfoodprices_backgroundnote_apr08.pdf.

The subprime financial crisis, and its massive aftermath, is yet another illustration of the free-fall economy. The episode did not start with paralysis in any observable market. The flow of transactions was high, as brokers knew, all too well in fact, how to arrange for loans and sell properties. However, they and their customers respond to incentives, including the large infusion of cheap money that the Federal Reserve pumped into the market, and to the constant insistence by Congress that Fannie Mae and Freddie Mac guarantee loans to high-risk borrowers who lacked the resources to repay. Cheap money allows people to bid up the price of housing to unsustainable levels until no greater fool can be found, at which point the market collapses like a house of cards.[15] To be sure, cheap money and imprudent government guarantees do not account for all the failings of the financial system. Indeed, the unprecedented level and complexity of securitization of these subprime mortgages could easily have added fuel to the fire by creating a crisis in valuation once the bubble burst in the underlying assets. The resulting distress is plausibly linked to mark-to-market (or, to accountants, "fair-value") valuation techniques, which involve periodic reevaluation of unsold assets to market prices. In all, these techniques may have generated the downward cascades that overwhelmed all the (marginal) protections that the investment banks built into the initial financial models.[16] However, regardless of how one treats the various valuation techniques for these assets, gridlock was not the source of distress. Put otherwise, excessive volatility can be as deadly as excessive stalemate. To talk about the one without the other is to deny the complexity of what really goes on in the economy as a whole.

III. INSUFFICIENT PROPERTY RIGHTS: THE BROADCAST SPECTRUM

Aside from ignoring the major issues discussed above, Heller also misclassifies as gridlock problems matters that are better treated under other rubrics. The chief illustration of this problem is his analysis of the broadcast spectrum, which has been subject to inefficient allocation over its entire history. In dealing with this issue, Heller makes the bald claim that "[o]ver 90 percent of [airwaves are] dead air because ownership of broadcast spectrum is so fragmented."[17] The factual predicate is true (or at least true enough), as is evident from a graph of spectrum utilization, which shows steep peaks of intensive use interspersed with areas of virtually no use at all.[18] The obvious resource loss in this scenario is the underexploited portion of the spectrum which, if put into private hands through auction, is worth billions of dollars. The question for Heller is how

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15. See, for an account, JOHN B. TAYLOR, GETTING OFF TRACK: HOW GOVERNMENT ACTIONS AND INTERVENTIONS CAUSED, PROLONGED, AND WORSENED THE FINANCIAL CRISIS 1–14 (2009), with graphs depicting the reduced housing supply if the "Taylor rule" on money supply had been followed.

16. For my view, see Richard A. Epstein & M. Todd Henderson, *Marking to Market: Can Accounting Rules Shake the Foundations of Capitalism*, 36 J. CORP. LAW (forthcoming 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1385382.

17. HELLER, *supra* note 1, at xiii.

18. For discussion, see Thomas W. Hazlett, *Spectrum Tragedies*, 22 YALE J. ON REG. 242, 248 fig.1 & n.28 (2005).

to squeeze this manifest resource failure into his gridlock model. Unfortunately, that cannot be credibly done. Far from fragmented ownership, the spectrum has one owner—the wrong owner—the United States.

To see how this came about requires some historical account of the rules that govern the acquisition of property rights under a private and public law approach. The common law and Roman law approaches both start with this obvious limitation: there is no state, as such, which can confer to particular individuals title to that which is unowned in the state of nature. I have already indicated that with respect to mixed commons (like water, with both collective and private uses), the customary legal solutions all placed limitations on the ability, first of riparians, and then of other individuals, to extract water from the river. In those contexts, taking initial possession was the only way to reduce water to private ownership, but there were clear customary limits on the amount of water that could be removed from the river by that technique. With respect to land, animals, and chattel, those limitations were removed so that the acquisition of a *res nullius*, or an ownerless thing, went to the first possessor who was vested with ownership rights from top to bottom, i.e., from the center of the earth to the heavens, or *ad coelum et ad inferos*.[19] The key feature of these rights was that they carried not only the right to exclude, but also extensive rights of use and of disposition. Use rights confer value and alienation rights allow the asset to move from low- to high-value uses by a variety of techniques—from outright sales, to partial sales (measured either by space or time), to joint ventures.

The initial system of property rights thus built in a dynamic element that allowed for the voluntary reconfiguration of rights in light of new technical possibilities and market opportunities. Much of the common law in these circumstances facilitated exchange by the use of deeds and recordation that firmed up the transaction between the parties and gave notice to the rest of the world.[20] It is this system of transfer that can, on occasion, lead to excessive fragmentation. Heller explores this capacity in the context of an inheritance regime that treats the next generation as tenants in common with the whole—a practice that often reflects the limitations of familial or tribal concerns.[21] It bears noting that in these contexts primogeniture is often a successful strategy that concentrates effective land management skills in the eldest son. But the true effectiveness of that strategy is measured, in part, by the ability to impose charges, secured by the property for the benefit of other children who therefore receive financial support even though they do not retain a control interest in the property. It is only with the proliferation of multiple interests in land that these sharing arrangements can be achieved without debilitating compromises in control. Other types of arrangements may be needed to structure complex commercial ventures that are not subject to the equitable constraints that control the distribution of wealth within the family, and

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19. *See, e.g.*, Pierson v. Post, 3 Cai. 175 (N.Y. Sup. Ct. 1805) (holding that ownership of a wild animal goes to its first possessor); Pile v. Pedrick, 31 A. 646, 647 (Pa. 1895) (recognizing a right to exclude subsurface encroachment of only a few inches).

20. For my view of the increased freedom offered by recordation of servitudes, see Richard A. Epstein, *Notice and Freedom of Contract in the Law of Servitudes*, 55 S. CAL. L. REV. 1353, 1355–56 (1982).

21. HELLER, *supra* note 1, at 122–27.

these too are only made possible by property regimes that organize divided interests in land.

As applied to the broadcast spectrum, the first question is whether the system of land rights (which extends to the skies) is sufficient to blockade any and all use of the overall system. In practice, everyone who faced this problem before Heller agreed that landowner blockades of spectrum transmission or air travel was a dead social loser.[22] So the question was how best to avoid that result. The usual rule was to "redefine" the property rights so that they extended only to the level of effective occupation from the ground, and no higher.[23] That redefinition strategy, however, carries with it real costs in that it paves the way for other arbitrary state redefinitions that might not prove to be so socially beneficial. Therefore, in this potential gridlock area, it is correct to create a distinct set of spectrum rights, but with a test that is more restrictive of government power than simply an assertion (though correct) of overall social gains.[24] The key point is to add a distributional inquiry: Does the redistribution of rights reduce the net worth to the individuals who are subject to the new legal regime? With respect to air traffic and spectrum use, the overall gains are so massive and so *reciprocal* that it is hard to see how any landowner who is denied either a holdout right or a cash compensation right is worse off with those uses than without them. Other forms of property redefinition cannot meet this distributional standard, and for them the case for cash compensation is, in general, far stronger.

Thus far, the analysis of the spectrum shows that one technique for blocking private gridlock is the judicious use of an eminent domain power, whose just compensation requirement may be satisfied by the in-kind benefits that are given to landowners.[25] However, even where a state taking is justified, there is still the question of how to allocate the spectrum use among various players once that use is freed of ground-owner constraint. The common law private property solution is an imitation of a first possession rule, which allows spectrum rights to be claimed by the first user of that particular (fuzzy) band. There was some nascent movement toward this bottom-up system in the radio frequencies during the early 1920s, including the well known *Oak Leaves* case that explicitly built on the common law analogies.[26] The virtues of this system cannot be easily

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22. This idea is illustrated by the early case law on flight-path trespasses. *See, e.g.*, Hinman v. Pac. Air Transp. Corp., 84 F.2d 755, 758 (9th Cir. 1936) (calling it "utterly impracticable" that "the law should uphold attempts of landowners to stake out, or assert claims to definite, unused spaces in the air").

23. *Id.* at 758–59; United States v. Causby, 328 U.S. 256, 264 (1946) (stating that one's ownership extends to "the space above the ground as he can occupy or use [it] in connection with the land").

24. *See* RICHARD A. EPSTEIN, SUPREME NEGLECT: HOW TO REVIVE CONSTITUTIONAL PROTECTION FOR PRIVATE PROPERTY 26–34 (2008) (discussing the implications of social contract political theory for legitimization of government projects and the required distributional constraints).

25. The in-kind benefit comes in the form of restrictions on the property rights of others, providing parallel and reciprocal benefits. *Id.* at 49–50.

26. Chi. Tribune Co. v. Oak Leaves Broad. Station (Ill. Cir. Ct. 1926), *reprinted in* 68 Cong. Rec. 215–19 (1926) (recognizing rights in spectrum acquired by application of

dismissed; nor should they be unduly romanticized. The key advantage of this system is that it allows for the creation of a robust set of ownership rights that permit effective deployment and use. The obvious problem is with user interference across signals, resulting in lower transmission quality, to which there are several possible responses. The first is that the frequencies can be effectively spaced, as each new entrant tries to create distance between him and his neighbor to minimize that risk. The implicit assumptions behind this model are, first, that the entries are well spaced so as to let parties establish priority of entry—an assumption that fails when modern technology allows for the instantaneous occupation and utilization of spaces and forces the use of auctions to privatize the spectrum. The second assumption is that there is a limitation on the amount of bandwidth that can be taken by each occupier and a limitation on the number of frequencies that each can take. The third assumption is technological, namely that the use of more efficient transmission devices can be used to pack more and more information into narrower bands, which would reduce interference.

This early system for broadcast licenses did not last, in part because of the interference problem, which intensified during the rush to establish priority rights and led to the passage of the 1927 Radio Act.[27] The Act established the Federal Radio Commission, which leveraged the physical interference problem into a comprehensive system of government licenses to all players, even those who had perfected their common law title under the first possession system. This maneuver, therefore, removed private ownership as a means of allocation for the broadcast spectrum, and led to the adoption of a complex administrative system based on "public convenience, interest, or necessity."[28] This language was construed in grand style, which led to this colossal miscalculation by Justice Felix Frankfurter, who styled himself as the sophisticated opponent of naïve market solutions:

> The Act itself establishes that the Commission's powers are not limited to the engineering and technical aspects of regulation of radio communication. Yet we are asked to regard the Commission as a kind of traffic officer, policing the wave lengths to prevent stations from interfering with each other. But the Act does not restrict the Commission merely to supervision of the traffic. It puts upon the Commission the burden of determining the composition of that traffic. The facilities of radio are not large enough to accommodate all who wish to use them. Methods must be devised for choosing from among the many who apply. And since Congress itself could not do this, it committed the task to the Commission.
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> The Commission was, however, not left at large in performing this duty. The touchstone provided by Congress was the "public interest, convenience, or necessity," a criterion which "is as concrete

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the resource to productive use, essentially converting priority in time to priority of right, and drawing on water rights models).

27. Radio Act of 1927, Pub. L. No. 69-632, 44 Stat. 1162 (repealed or merged 1934). For an account of the events leading up to its passage, see Thomas W. Hazlett, *Oak Leaves and the Origins of the 1927 Radio Act*, 95 PUB. CHOICE 277, 278–84 (1998).

28. Radio Act, § 4, 44 Stat. at 1163.

> as the complicated factors for judgment in such a field of delegated authority permit."[29]

The many failures of the FCC in buckling down to the task that Justice Frankfurter assigned it have been well documented.[30] No one could have ever expected this so-called "touchstone" to provide serious guidance on frequency allocation within the radio band. The want of ownership rights, and the consequence of inefficiency within the band, cannot be attributed to "too much ownership." They are attributable to the want of any private ownership system at all. The problem is administrative overreaching, not overlapping and conflicting property rights. Frankfurter's notorious "touchstone" may be sufficient under current administrative law to permit the delegation of legislative authority to administrative agencies.[31] Operationally, however, it is too vague to supply any guidance for intelligent decisionmaking. Furthermore, the technical conditions attached to licenses dictate the kinds of equipment that the licensee must deploy, which often strips the allocated frequencies of much of their value. Indeed, one of the problems in this portion of the spectrum is not gridlock, but localized underutilization borne from direct regulation. A bandwidth for radio or television allocated fifty or sixty years ago is now more than ample for its original purpose. A private owner would keep some portion of the band, and license, lease, or sell the remainder to some noninterfering use in order to squeeze more value out of the frequency. However, that cannot happen when state licenses require the government to authorize multiple uses, which governments will find difficult to issue in any politically charged environment. The result is waste through government intervention, precisely because there is no private property system to act as a counterweight.

The use of state power explains some of the implicit inefficiencies in the use of the highly occupied spectrum, but it cannot explain the relative idleness of huge portions of the spectrum today. Gridlock, however, offers no explanation either. The key decisions were all made as early as 1912, when the United States government made its initial spectrum allocation (free of all ground-owner concerns) by administrative fiat with, at best, a partial appreciation of the future evolution of the system.[32] The Navy, therefore, came out very well because it was

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29. Nat'l Broad. Co. v. United States, 319 U.S. 190, 215–16 (1943) (quoting Radio Act of 1927, § 4, 44 Stat. at 1163, and Fed. Commc'ns Comm'n v. Pottsville Broad. Co., 309 U.S. 134, 138 (1940), respectively).

30. *See, e.g.*, R. H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 8–9 (1959); Thomas W. Hazlett, *The Rationality of U.S. Regulation of the Broadcast Spectrum*, 33 J.L. & ECON. 133, 141–43 (1990).

31. Such was the ultimate holding of *National Broadcasting Co.*, 319 U.S. at 225–26, though the language in question was by then part of the Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 1064, into which the surviving parts of the 1927 Act were merged. For a broad delegation, see, for example, Yakus v. United States, 321 U.S. 414, 420 (1944) (upholding the Office of Price Administration's power to "stabilize" prices and to prevent "speculative, unwarranted, and abnormal" price increases (quoting Emergency Price Control Act, § 1(a), 56 Stat. 23 (1942))).

32. The Radio Act of 1912, 37 Stat. 302, required that broadcasters have licenses from the Secretary of Commerce and Labor. The history can be found in THOMAS G.

easy to see that it would have extensive ship-to-shore and ship-to-ship uses.[33] Similar allocations were made to other forms of government use, including public health and safety, which are, as Heller notes, both primitive and unreliable precisely because they are government operated.[34] These initial 1912 allocations proved wildly incorrect, and became more anachronistic with each passing generation.[35] It is not that we have gridlock among private property owners. It is that we have nontransferable government rights. The incomplete "propertization" of the spectrum has led to public gridlock.

The same can be said of the FCC efforts to create areas of unlicensed spectrum, where parties rely on self-help devices to prevent the usual kind of interference clutter between adjacent radio signals. There is an extensive technical dispute as to whether this system of unlicensed low frequencies allows for more intensive utilization than the alternative system that allocates a portion of the spectrum to a single owner who can then decide whether and, if so, which rights to permit, perhaps at lower rates.[36] Ultimately, if the unlicensed spectrum is inefficient it is not so much because of gridlock. It is because of interference externalities that could be eliminated by allowing single owners to regulate defined portions of the spectrum at some positive price.

IV. THE GOVERNMENT CREATION OF GRIDLOCK: LABOR MARKET REGULATION

Heller's third key mistake ignores the positive role that the government has taken in *creating* gridlock in otherwise competitive markets. Competitive markets work well *not* because they are instantly and always in perfect equilibrium. Rather, they do so because of the activities of transactors on each side of a market, examining the choices open to them on the other side. It is easy, therefore, to defend a legal regime that seeks to prevent the combination of parties on either side of the market that would reduce the available choices on the other. This notion is clearly expressed in antitrust law, which regards horizontal efforts to fix prices or to divide territories as per se violations of the law, given their adverse social consequences.[37] Alternatively, a single monopolist may raise the price of

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KRATTENMAKER & LUCAS A. POWE, JR., REGULATING BROADCAST PROGRAMMING 5–12 (1994).

33. KRATTENMAKER & POWE, *supra* note 32, at 6–7.

34. HELLER, *supra* note 1, at 83.

35. Thomas Hazlett argues that, contrary to the "error theory" advanced to explain the failure of the early allocations, the chosen regulatory approach was actually a self-interested move to maximize rents for influential constituencies. Hazlett, *supra* note 30, at 134. There is nothing that says different factors had identical weights at different times.

36. *See, e.g.*, Yochai Benkler, *Some Economics of Wireless Communications*, 16 HARV. J.L. & TECH. 25, 27–36 (2002) (critiquing a property rights approach and suggesting open networks to optimize capacity). For a comprehensive account of the spectrum management choices, see Philip J. Weiser & Dale N. Hatfield, *Policing the Spectrum Commons*, 74 FORDHAM. L. REV. 663 (2005).

37. United States v. Topco Assocs., Inc., 405 U.S. 596, 608 (1972) (finding horizontal allocation of territories per se illegal); United States v. Trenton Potteries Co., 273 U.S. 392, 396–401 (1927) (finding horizontal price-fixing agreements to be, in themselves, unreasonable restraints on trade and therefore illegal).

goods or services above the competitive level, which in turn will reduce the total level of social welfare by blocking transactions for mutual gain that would be completed in a competitive market somewhere between the competitive and the (higher) monopoly price.

This stylized account of antitrust law is not concerned with gridlock issues. The single monopolist has every motivation to reduce transaction costs in order to maximize his gains. The only modest source of difficulty for the monopolist is the choice between a single-price or multiple-part pricing schedule (where the quality of goods remains constant) in order to reach both high and low demanders simultaneously.[38] This difficulty, however, is not qualitatively greater than similar pricing issues that can arise in competitive markets, where differential costs of providing service can easily require differential pricing in order to prevent the cross-subsidies that can drive some desirable customers from the market. In addition, they must find out ways to allocate the joint costs of production between two or more goods for which demand may vary.[39]

The risks of gridlock are vastly increased by the formation of bilateral monopolies that raise transactional difficulties not found in heavily cartelized markets. One of the great "achievements" from the New Deal and forward has been the unerring ability to convert efficient competitive markets into inefficient regulated markets, where the gridlock issues—here measured by the increased cost of negotiations, plus the risk of strikes and other breakdowns—become paramount. We can thus identify an important class of cases of government-sponsored gridlock.

These pro-gridlock policies stand in instructive contrast to the common law preference for at-will type contracts, whereby a worker could be fired for good reason, bad reason, or no reason at all.[40] Dismissal could be accompanied by a severance package computed by a simple formula. And it was paired with the right—still respected today—of the employee to quit for good reason, bad reason, or no reason at all.[41] The rule was only a default provision, subject to contractual adjustments on such matters as severance pay, which were often designed to prevent strategic quitting that could disrupt firm production. Indeed, one of the soundest (and most reviled) decisions of common law courts was to allow an

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38. For example, consider the movie theater ticket pricing strategy to charge less for seniors and students in order to capture these price-sensitive segments of the market without sacrificing the high prices charged for general admission.

39. Michael E. Levine, *Price Discrimination Without Market Power*, 19 YALE J. ON REG. 1, 8 (2002) (demonstrating how shared costs can bring about price discrimination even from firms without market power).

40. For my defense, see Richard A. Epstein, *In Defense of the Contract at Will*, 51 U. CHI. L. REV. 947, 951–53 (1984). For the common law example, see Payne v. Western & Atl. R.R., 81 Tenn. 507, 518–19 (1884) ("[M]en must be left, without interference to buy and sell where they please, and to discharge or retain employe[e]s at will for good cause or for no cause, or even for bad cause without thereby being guilty of an unlawful act *per se*. It is a right which an employe[e] may exercise in the same way, to the same extent, for the same cause or want of cause as the employer."), *overruled on other grounds by* Hutton v. Waters, 179 S.W. 134, 138 (Tenn. 1915).

41. Epstein, *supra* note 40, at 954, 973–74.

employer to bring an action against a union for inducing breach of the yellow dog contract, whereby the worker agreed not to join a union so long as he remained on the job.[42] The point was to use tort principles to back up contractual arrangements. Suits against individual workers who quit were likely to prove a transactional nightmare, although they were not unknown.[43] Yet the great advantage of using the tort action of inducement of breach of contract against the union was that it could enjoin activities to recruit workers into hidden membership (a breach of contract) before the strike occurred, nipping the gridlock problem in advance. This tort action offered a powerful method whereby employers could preserve the operation of a competitive market—which is why it was targeted for extinction first in England under the Trade Disputes Act of 1906,[44] and then a generation later in the United States through the Norris–LaGuardia Act of 1932.[45] Both statutes gutted a private tort action that hampered gridlock in the form of strikes.

In the United States, Norris-LaGuardia was only the first step to greater gridlock. The National Labor Relations Act of 1935[46] took the issue to the next level by explicitly displacing competitive labor markets with a bilateral monopoly prone to gridlock. The NLRA imposes elaborate duties on both sides to negotiate in good faith with each other.[47] It therefore makes the refusal to negotiate an unfair labor practice.[48] It further prevents individual workers from bargaining on their own account, so that all negotiations go through the union.[49] The only exit right left to the firm is bargain to impasse. The stakes for these negotiations are always high; the risk of strike remains large. Once the system is in place, the employer is stripped of the ability to make unilateral changes in labor contracts in response to major changes in conditions. The systematic decline in the automobile, steel, tire, and other industries can be attributed to this built-in rigidity, which means that all downward reduction in wages, benefits, and conditions of employment come too

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42. *See* Hitchman Coal & Coke Co. v. Mitchell, 245 U.S. 229, 252 (1917) ("The right of action for persuading an employ[ee] to leave his employer is universally recognized . . . .").

43. *See, e.g.*, Loewe v. Lawlor, 208 U.S. 274, 304–08 (1908) (upholding suit against a labor union which had, among other things, organized mass withdrawal).

44. Trade Disputes Act, 1906, 6 Edw. VII, c. 47 (Eng.). For criticism, see Charles K. Rowley, *Toward a Political Economy of British Labor Law*, 51 U. CHI. L. REV. 1135, 1138, 1142–43 (1984) (discussing the conditions created by the 1906 Act that led to rent-seeking and broad immunities for unions).

45. Pub. L. No. 72-65, 47 Stat. 70 (codified at 29 U.S.C. §§ 101–110, 114–115 (2006)). For the influential book that spurred its adoption, see FELIX FRANKFURTER & NATHAN GREENE, THE LABOR INJUNCTION (1930). For my defense of the yellow-dog contract, see Richard A. Epstein, *A Common Law for Labor Relations: A Critique of the New Deal Legislation*, 92 YALE L.J. 1357, 1370–75, 1382–85 (1983).

46. Pub. L. No. 74-198, 49 Stat. 449 (1935) (codified as amended at 29 U.S.C. §§ 151–169 (2006)).

47. 29 U.S.C. § 158(d). For example, where a collective-bargaining contract is already in place, the law imposes complex notification requirements to various agencies and services with potentially burdensome waiting periods. *See id.*

48. § 158(a)(5).

49. § 159(a) (stating that designated representatives "shall be the exclusive representatives of all the employees in such unit for the purposes of collective bargaining in respect to rates of pay, wages, hours of employment, or other conditions of employment").

little, too late.[50] Despite this experience, the legislative impulse today is not to eliminate senseless friction by scrapping this gridlock-prone system. Rather, it is to move in the opposite direction. Thus, the misnamed Employee Free Choice Act,[51] which thus far has not become law, seeks to stop gridlock by forcing compulsory "interest" arbitration on an employer that tries to bargain to impasse. That interest arbitration differs sharply from grievance arbitration, for while the latter seeks to resolve differences between the parties under an existing collective bargaining agreement, interest arbitration has as its function the creation of a contract for the parties who have not agreed to anything. Once the process of contract negotiation has ground to a halt, government arbitration panels appointed by the Department of Labor can impose mandatory two-year contracts on both sides by fiat.[52] These contracts cover every aspect of the terms and conditions of traditional labor contracts—wages, work conditions, pensions, benefits, discipline, and the like. Ironically, Heller says not a single word about these legislative tendencies to abolish private property rights in ways that aggravate the gridlock economy he rightly deplores.

V. GOVERNMENT GRIDLOCK: LAND USE REGULATION

The creation of government gridlock also extends to real estate markets, which are always more difficult to operate than labor markets because of the obvious external effects that occur in land use, both in urban and rural environments. The current system of land use regulation is prone to conspicuous instances of gridlock that surface at every zoning hearing across the United States. The all-pervasive nature of the permit and regulation problem in land use markets shows that this problem is not one of those unobserved gridlock difficulties to which Heller refers from time to time.[53] The huge public tumults over zoning hearings give ample evidence of the paralysis that can descend upon the operation of real estate markets. The current situation is that the government cannot occupy property or initiate any project unless it is prepared to condemn the land.[54] But, under current law, its multiple agencies exercise a virtual per se veto power over every development that does not meet its exacting and often inconsistent standards. This problem is compounded because the *multiple* veto points found in zoning regulations often complicate the task of keeping a project alive, as various agencies, often backed by an indignant public opinion or community board, chip away at its economic viability. It need not be this way; the potential solution is a sensible system of regulation that operates on very different premises. This

50. *See* Epstein, *supra* note 45, at 1402.

51. Employee Free Choice Act (EFCA), S. 560, H.R. 1409, 111th Cong. (2009).

52. *See id.* § 3(h)(3) (modifying section 8 of the National Labor Relations Act, at 29 U.S.C. § 158). I have inveighed against this system in Richard A. Epstein, *The Case Against the Employee Free Choice Act* 50–67 (Univ. of Chi. L. Sch. John M. Olin Program in Law & Econ. Working Paper No. 452, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1337185. I also attack the provisions dealing with employer resistance during organization drives, and, more importantly, the proposed card-check voting arrangement that does away with secret ballots in selecting union leaders. *Id.* at 18–48.

53. *See, e.g.*, HELLER, *supra* note 1, at 2, 67, 187.

54. *See* MERRILL & SMITH, *supra* note 7, at 1221–22, 1258–59.

becomes apparent by comparing the current gridlock apparatus to the earlier common law rules that served to eliminate these costly and corrosive bottlenecks.

A. Common Law Rules

Any system of land use regulation is necessarily more difficult than the optimal form of regulation for labor markets. In labor markets, the physical externality issues are unimportant; what matters is whether the markets are organized in a competitive or regulated form. Not so with land use. To be sure, everyone agrees that, short of condemnation, landowners enjoy the *exclusive* rights of use and development for their property.[55] But on no account do they enjoy the *unlimited* rights of use and development of their property, given the twin torts of trespass to land and nuisance.[56] For example, it is clear and nonproblematic that the ownership of one parcel of land does not allow for the encroachment upon land owned by another.[57] But the harder cases all involve situations in which the harms involved do not come from physical entry or encroachment, but through invasion by smells, soot, vibration, odors, and the like. Every system of property rights of which I am aware brands these nontrespassory invasions as nuisances, rather than as trespass.[58] The logic for this is clear enough. As a first approximation, it is better if no one engages in nuisance-like activities of these types than if everyone does. The value of two neighboring parcels of land, on average, will both increase if each owner obeys general nuisance proscriptions. Therefore, no one wants to move back to a world in which the baseline entitlement of exclusive use confers unlimited rights of use.

Yet, the physical invasion requirement has a clear negative correlative that is consistent with the effort to use tort law to maximize the value of two (or more) adjacent plots of land: various kinds of admitted private harms are not actionable within the system. Modern economic theory calls these "pecuniary externalities." The classical law called them instances of *damnum absque injuria*—harm without legal injury. The root conception of both is that, for harms in these classes, there is no longer the positive association between the private right of action and overall social welfare. Rather, the correlation now runs in the opposite direction in that the private harm complained of, on average, is indicative of an improvement in overall social welfare.

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55. *See id.* at 16–18, 393 (citing 2 WILLIAM BLACKSTONE, COMMENTARIES *2) ("Blackstone referred to property with some hyperbole as 'that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe.'").

56. *See id.* at 1–15, 23–29, 50–51, 410.

57. *See, e.g.*, Garagosian v. Union Realty Co., 193 N.E. 726, 728 (Mass. 1935) (ordering removal of encroachments); Pile v. Pedrick, 31 A. 646, 647 (Pa. 1895) (ordering removal of underground encroachments).

58. *See, e.g.*, Morgan v. High Penn Oil Co., 77 S.E.2d 682, 689–90 (N.C. 1953) ("[A]ny substantial nontrespassory invasion of another's interest in the private use and enjoyment of land by any type of liability forming conduct is a private nuisance."). In this instance, the liability forming conduct was that the defendant oil refinery emitted "noxious gases and odors" in great quantities. *Id.*

These nonactionable harms include, most notably, four kinds of losses. The first is the blocking of views, which usually can only be prevented by stopping all forms of construction. As a joint matter, both sides are better off in the *ex ante* position if both can build, rather than neither. To let the first builder gain protections against like construction by others creates a perverse incentive for the premature development of land. The legal rule that tells the landowner, "do it now or do it later, as you please, and your rights remain the same, regardless," eliminates the need to play such games.

The second kind of nonactionable harms under nuisance law are harms that stem from a lack of access to another landowner's property. Thus, it is not an actionable nuisance to fill in wetlands, even if it denies access to the fish or wildlife that previously used it.[59] Nor is it a nuisance at common law to destroy the habitat that is desired by some endangered species, given the want of a physical invasion of the property of another. The point here is not that these habitat uses are not valuable, but, rather, it is that they are not well-regulated by coercion when the likely response of a landowner is to destroy or impair a habitat, lest it become a liability for his own use. The argument in this context is that while it is not permissible to have one's cattle graze on the land of another, it is permissible to allow the state to force owners to permit unowned cattle (or birds) to use one's land, even if it causes harm to the owner's farm animals or structures. It is, on this view, a nuisance for a landowner to exclude wild animals that want to graze on his land. (Under traditional views, this grazing would be actionable as a routine case of cattle trespass.) The government thus forces entry but disclaims liability by renouncing ownership of the harm-causing animals, disincentivizing landowners from maintaining such purposes. The better strategy, by far, is to allow the state to condemn property for habitat protection, or to allow the owner to enter into voluntary arrangements with environmental groups to preserve the habitat (such as agreements with oil companies that they will take more care in drilling for oil in exchange for paying a smaller royalty). Since there are many outsiders who can try to claim some unique interest in someone else's land, impositions by the public must be constrained to prevent freezing development in typical gridlock fashion.

The third example of a nonactionable harm in the land use context is identical to one found in labor markets; indeed, many cases involve an amalgam of the two. Competitive harms from new entry—a store moving in next door, for example—are nonactionable, no matter how great the financial losses to the incumbent. The reason for this rule is that any complete social accounting cannot limit itself to reckoning only the gains and losses between the two neighboring parties; it must also look to the position of third persons whom the transaction impacts. The ordinary nuisance that diminishes the effective use and value of all land reduces the opportunities of third persons to buy and lease into the system. The introduction of new competitors into the marketplace has positive effects by expanding consumer choices. So the negative correlation between private harm

59. *See, e.g.*, K & K Constr. v. Dep't of Natural Res., 551 N.W.2d 413, 417 (Mich. Ct. App. 1996) ("The decision to build a restaurant on land, or a request to fill in wetlands, does not constitute a nuisance that the government may abate."), *rev'd*, 575 N.W.2d 531 (Mich. 1998).

and social gain justifies calling those competitive harms nonactionable—in a conscious and correct refinement of John Stuart Mill's harm principle, which is otherwise necessarily overbroad.[60]

The fourth set of nonactionable harms includes those in the form of personal offense taken at what others say or do. Basic First Amendment law takes the position that the mere aversion one has to the views of another individual or his expressive practices, no matter how intense, offers no justification for stopping that individual from speaking or acting as he pleases.[61] The most dramatic examples of this principle are vituperative speech and flag burning (so long as the complainant does not own the flag).[62] Here, again, we are generally better off with both kinds of speech than with neither, and are careful to make sure that people cannot gain rights to control the actions of others by taking undue umbrage at them. Once again, some emendation of the Millian principle of harm is needed to slow down the undue expansion of government regulation. It follows from this principle of offense, therefore, that there is no actionable nuisance for reductions in property value because individuals of—fill in the name of your least favorite group of people—have moved into the neighborhood.

In all these cases, the use of the harm principle depends, therefore, upon an accurate definition of what counts as an actionable or cognizable harm, for otherwise virtually all unpleasant personal interactions could trigger judicial intervention. The exception to the principle will swallow the rule unless the definition of harm that is used in individual cases ties into some social objective, namely, to increase the overall level of social welfare, which can only be done by creating, whenever possible, competitive institutions. Competitive harms may be real to the participants, but they have no positive correlation to social losses. Indeed, the only substitute for competitive losses is a rigid regime of state protectionism that uses force to prevent one individual from going into competition with another. Similarly, as between two landowners, the optimal value is normally obtainable by allowing each to build within his property lines. If, for some reason, one party wants to acquire rights to look over the land of another, he can acquire that right by purchasing a restrictive covenant that runs with the land, binding and benefiting both sides. Once the class of cognizable harms is correctly constrained, the area for potential remedial action shrinks as well. At this point, the central issue becomes the *type and timing* of the remedies for the class of wrongful invasions so defined. In this regard, we have to take due notice that the land is often both permanent and fixed, so that even if one person can sell or lease, his successor in title will have to face the same problems. It is painfully easy to see how the operation of a factory that pollutes one area today can continue to pollute that same area tomorrow. Hence, injunctions, as well as damages (which are

60. For my discussion of the uses and limits of this principle, see Richard A. Epstein, *The Harm Principle—And How It Grew*, 45 U. TORONTO L.J. 369 (1995).

61. *See* Texas v. Johnson, 491 U.S. 397, 414 (1989) ("If there is a bedrock principle underlying the First Amendment, it is that the government may not prohibit the expression of an idea simply because society finds the idea itself offensive or disagreeable.").

62. *See* Spence v. Washington, 418 U.S. 405, 414–15 (1974) (defacing the American flag in political protest is a protected form of expression).

difficult to quantify in any event), have always been available, at least for those nuisances above a certain low threshold,[63] where the risks of holdout are generally regarded as material.

Timing, however, is equally critical to the type of remedy available. The usual common law approach postponed the use of injunctive relief until the expected hazard was both imminent and serious.[64] It was considered better to wait, so long as the damage remedy remained available for any harms that did occur (these remedies already gave land users and developers one strong incentive to steer clear of trouble). Waiting to seek an injunction reduces the administrative costs of the system by allowing most cases to sort themselves out long before any kind of serious harm occurs. But once the harm becomes imminent, no mercy for the defendant becomes the appropriate response—one that has the added benefit of encouraging defendants to steer clear of the line, or to procure the consent of neighbors for potential injuries before undertaking a project. Thus, the bottom line is that these rules produce very few, if any, cases of gridlock. The definition of nuisance excludes the three most common types of harm—blocking views, competition, and offense—and uses few, strong, and late remedies to deter those nuisances that remain actionable under the law.

There is, of course, one serious gap in this model that in some instances requires public intervention. Nuisances come in all shapes and sizes. The private law system works best when one neighbor pollutes or threatens to pollute his neighbor. But the system does not work as well when it is unclear which neighbor will be harmed if a nuisance occurs. It is costly for private parties to band together, and it is unlikely that one neighbor will sue for the benefit of all. In these circumstances, the use of public power to enjoin activities is an effective way to overcome this transactional barrier. But there is one huge caveat that defines this shift from private to public enforcement: the identity of the plaintiff may change, but the principles under which either damages or injunctions are issued do *not.* The sole reason for the shift is transaction cost reduction, not to give the state expanded powers that upset the efficient distribution of remedies that were created under this common law regime.

B. Modern Administration

The modern system of land use regulation has disregarded the above assumption. Instead, it assumes that once the state gets involved in the case, neither the narrow definition of harm nor the restricted use of injunctions to cases of imminent harm matters. Each and every one of the four types of harms excluded

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63. These low-level common nuisances are rendered per se legal under the so-called "live and let live" rule on the grounds that the initial presumption is reversed. Both parties are better off suffering some small nuisance in exchange for an increased freedom of action. *See* Bamford v. Turnley, [1862] 122 Eng. Rep. 27, 33 (K.B.); RESTATEMENT (SECOND) OF TORTS § 822 cmt. g (1979).

64. "As a matter of history . . . [t]he writ of nuisance, like other early common-law actions, provided only for damages. Eventually, landowners complaining of nuisances could also obtain injunctions from a court of equity, provided the harm was irreparable and the other conditions for equitable relief were met." MERRILL & SMITH, *supra* note 7, at 962 (citations omitted).

from the private law of nuisance thus becomes the proper object of permissible public regulation.[65] This hugely expanded definition of harm guarantees that the number of actionable interactions between people will increase, which in turn will put greater pressure on the remedial side of the system. And when the remedies are considered, the requirement of imminent harm disappears in favor of some kind of precautionary principle, whereby the activity in question has to be regarded as wholly safe before anything can be undertaken.

The current system thus starts with the proposition that blocking views, preserving habitat, engaging in economic competition, or engaging in activities that cause offense locally are now all legitimate concerns for regulation for which no compensation of the affected landowner is required.[66] Any new structure that is built within any community will, therefore, be likely to have profound effects on large numbers of nearby persons. The permit process is so cumbersome and time-consuming that it could not possibly be run through the judicial system. So by default, an administrative approach has to take over regulation, which makes land use regulation fertile ground for a system of multiple vetoes that defines the gridlock economy. Typically, this process will be dominated politically by well-connected persons (often with private agendas) who live in the neighborhood that abuts the new development. At this point, the aggregation of preferences is a nightmare because some of the neighbors will get economic, social, or aesthetic gains from the operation and, hence, will favor it while many others will be opposed. If the matter ceases to be an up or down vote on the new project, virtually everyone will have some idea on how to tinker with the enterprise in order to expand their scope of influence. The local bias will exert its influence on the timing question. With harms so numerous, the imminence test yields to the precautionary principle, whether we deal with zoning or environmental protection. After all, if the problem is that the construction of a new luxury building will alter the character of a neighborhood, we do not have to wait until it is leased out to see the peril (or benefit) of that action.[67]

In response, we frontload the permit process under a full participation model in which every outsider has his or her say. The public officials or boards then have veto power over the project, often in layers. The New York City Uniform Land Use Review Process ("ULURP"), for example, requires, after an initial certification, a Community Board Review, a Borough President Review, a City Planning Commission Review, a City Council Review, and a Mayoral Review.[68] So the new standard requires that you prove that you will not step on any of the broad interests that are relevant in these cases before you are allowed to undertake the new project. The permitting process becomes, by far, the single most important feature of land development. Most new projects must go through

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65. *See id.* at 1049–52.

66. *See id.*; *see also id.* at 1062–63.

67. *See, e.g.*, Chinese Staff & Workers Ass'n v. N.Y.C., 502 N.E.2d 176, 180–82 (N.Y. 1986) (holding that the term "environment" was broad enough to cover population shifts of various sorts).

68. *See* Dep't of City Planning, *The Uniform Land Use Review Procedure (ULURP)*, NEW YORK CITY, http://www.nyc.gov/html/dcp/html/luproc/ulpro.shtml (last visited Sept. 9, 2009).

multiple layers of permit approval before construction can even begin, including dredge and fill permits that are within the province of the Army Corp of Engineers. And where the federal government leaves off, state departments of natural resources can pick up the slack. Gridlock personified.

Moreover, once we have objected to the common law approach because of external effects, nothing says that community harms cannot also arise from the inside of a real estate project which has, of course, no nuisance-like characteristics. It is, therefore, common today that we have all sorts of other strictures on new construction that become veto or choke points for the process. The amount of affordable (i.e., below market) housing that must be built is now subject to extensive multilateral negotiations, which must be concluded before construction can begin.

No one thinks that a higher supply will result in more units at lower prices. Access for the disabled, especially those in wheelchairs, becomes another example of a legitimate state interest, such that any project can be slowed down or stopped if it does not meet stringent requirements, whether or not someone disabled lives there.[69] Labor relations also matter. Since market solutions were already rejected in labor cases, it is now fair game to slow down a permit process if organized labor does not get guaranteed work on the project, for example. And, of course, there is also no particular reason to refrain from imposing various other exactions on local developers, not just to handle the increased traffic they bring into the neighborhood, but also to subsidize the construction of improvements that benefit existing residents. And from this plethora of permits comes no judicial relief. Talk to various large-scale developers and they will speak as one. There is no legal protection. Everything requires a political solution. It is gridlock squared.

The dynamics of this process have one key feature: the systematic separation of power from responsibility. There is no effective remedy against an administrator who says he needs to see more documents or needs more time to review the documents he already possesses. Nor is there any principle of res judicata that guarantees the approval given one day will stick the next. The basic rules do not treat permits as vested until final approval is obtained, no matter how extensive the predevelopment costs undertaken in reliance on administrative understandings. Litigation, moreover, is not permitted until the administrative process has been exhausted,[70] which allows officials to string along everything even further. It does not take much imagination to see how costs spiral, which in turn brings in fresh calls for additional subsidies and penalties, which overheat the market still further. Different kinds of permits, moreover, are administered by different kinds of groups with different sorts or expertise so that any change in one dimension could require a redrawing of plans that have to run through the entire cycle yet again. Gridlock necessarily follows in a permit culture, not from having too many private property rights, but from having too many systems of oversight

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69. *See ADA Accessibility Guidelines for Buildings and Facilities (ADAAG)*, ADA STANDARDS, § 4.1, http://www.access-board.gov/adaag/html/adaag.htm#4.1 (last visited Sept. 11, 2009).

70. Williamson Cnty. Reg'l Planning Comm'n v. Hamilton Bank of Johnson City, 473 U.S. 172, 194–96 (1985).

in search of too many objectives, which leaves too much unfettered discretion in the hands of public officials who do not have to bear the costs of their own arrogance or mistakes.

The question then arises as to what tactics could be used to overcome this problem in the current legal environment. One possibility for overcoming gridlock is to engage in condemnation of properties needed to create some larger assembly of land. This approach appeals to Heller,[71] who is keenly aware of how a single landowner with a strategically held tract can block an entire process.[72] But the eminent domain process is, in fact, highly complex. On the one hand, Heller is far too sanguine about the operation of the power. He thus defends the Supreme Court's decision in *Kelo v. City of New London*,[73] which generated a firestorm of public protest when private land was taken for the purposes of economic development under a very broad reading of the "public use" language in the takings clause, giving the local government complete discretion on what land to take.[74] Heller's argument would make some sense if there were some sort of land assembly process that the *Kelo* plaintiffs had blocked. But, in fact, this was a classic illustration of eminent domain abuse because the City of New London had no idea what it was to do with the land (which five years later still lies vacant), and at no time needed it in order to complete any of the projects that it had on tap. To say that "the underlying facts may seem troubling"[75] understates the point a thousand fold, given that the Supreme Court could have affirmed the ability of the state to take private lands in order to overcome assembly problems without giving it carte blanche to roust individuals from their homes in order to get snazzier buildings in their place. And the situation does not get any better because the compensation provided in these cases always leaves the landowner worse off than before by denying compensation for any of the collateral costs associated with eminent domain, such as litigation costs, appraisal costs, and moving costs. The eminent domain solution is thus capable of real abuse that leads to excessive condemnations for no good social reasons.

There are, of course, many situations in which eminent domain powers are available but cannot be used effectively. And here we see the gridlock problem in yet another guise. On this point, Heller offers one proposed solution that is misplaced. In the first instance, he argues that the way to cope with the various approval processes is through the creation of a system of land assembly districts, which he claims will "fix gridlock by giving neighbors a say in whether their land is assembled for economic development,"[76] particularly in blighted areas.[77] The point here is to allow "the neighbors" to decide what land assembly projects belong in "their community." But the program only adds an additional layer of confusion to all that precedes it. Many of the most bitter land use disputes take

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71. *See* HELLER, *supra* note 1, at 109–15.
72. *Id.* at xiii, 113.
73. *Id.* at 117 (citing Kelo v. City of New London, 545 U.S. 469 (2005)).
74. *Kelo*, 545 U.S. at 488–89; *see* HELLER, *supra* note 1, at 116–17.
75. HELLER, *supra* note 1, at 117.
76. *See id.* at 119.
77. *Id.* at 119–21. For the complete discussion, see Michael Heller & Rick Hills, *Land Assembly Districts*, 121 HARV. L. REV. 1465 (2008).

place where the developer has put together land for a new project by voluntary means alone. Yet, it should not be thought that "the community" will have no say in whether that project is completed. Unfortunately, when it does have its say, it often responds to powerful pressures to say that a development that is needed citywide should be completed, just "not in my backyard" ("NIMBY").[78]

The NIMBY movement gets off to the wrong start when it claims ownership interests in property—"*my* backyard"—that is owned by others. Just deciding where the district lines should be drawn will create major disputes, as there are sure to be some projects that are located at the edge of one district whose impacts will be felt by individuals in one or more adjacent districts. Any land assembly districts will just add another layer of gridlock to the cumbrous processes already in place. Quite simply, there is no way to fix the gridlock problem unless we narrow the definition of externality to exclude all the various ills that now count as protectable harm. Once that definition is narrowed, the eminent domain process can kick in. Those people who wish to require a builder to redesign his structure for what they conceive of as aesthetic reasons may do so as long as they pay the freight. But it is amazing how few soft externalities people care to correct when forced to tax their community to achieve that end.

In addition, Heller does not fully understand why the eminent domain process does not work in those cases for which it is needed. For example, no one disputes that airports and runways often require use of the eminent domain power for land assembly. Nor does anyone question that taking land for airports is taking land for public use. For many years, the construction of airports did not generate huge controversy, even when master builders like Robert Moses[79] were known to trample small people under foot.[80] Yet, while Heller reports that since the deregulation of air traffic in 1975, the volume of traffic has tripled, only one new airport has been built, in Denver.[81] The explanation, however, is not gridlock from private ownership, which is counteracted by the capacity to condemn land on payment of just compensation. Indeed, many jurisdictions have "quick take" statutes that allow the property to be paid for before the total amount of compensation is determined, which in some instances is lowballed.[82] Rather, it comes through the operation of the extensive permit system that gives all sorts of persons, including nonowners of the condemned property, an opportunity to challenge the location and size of the airport. Those powers exist even if the designated land is already located in public hands. In some instances, the objections, which relate to nuisances such as noise and traffic, may be well

78. MERRILL & SMITH, *supra* note 7, at 1063.

79. Paul Goldberger, *Robert Moses, Master Builder, Is Dead at 92*, N.Y. TIMES, July 30, 1981, at A1.

80. *See* EPSTEIN, *supra* note 24, at 78.

81. *See* HELLER, *supra* note 1, at xiii.

82. For an illustration of how complex the compensation process can be for land that is subject to divided ownership of various sorts, see City of Chicago v. ProLogis, 890 N.E.2d 639 (Ill. App. Ct. 2008), *aff'd*, 923 N.E.2d 285 (Ill. 2008). I have worked as a consultant to the landowner in this case. For my take on this issue, see Richard A. Epstein, *How to Undermine Tax Increment Financing: The Lessons of* ProLogis v. City of Chicago, 77 U. CHI. L. REV. 121 (2010).

conceived. But in other cases, the protests are done because of all sorts of collateral motivations. It is thus difficult in these cases to defend the proposition that huge public projects should be whisked through the political and administrative process without a close look. But, no matter how the trade-offs between speed and legitimacy are done, one thing is clear: gridlock from private ownership is just not part of this knotty problem.

VI. THE PATENT THICKET

The last of the gridlock situations that calls for some examination is the structure of ownership rights under patent law. The claims for the creation of an anticommons lie in the assertion that useful pieces of information, particularly about drugs and drug research, are parceled out among so many rights holders that it is impossible for diligent researchers to assemble the needed tools and chemicals for further investigation via voluntary cooperation. In general, there are two ways to test this claim. The first is to ask whether there are any other explanations for the decline in new drug innovation. The second is to ask whether, even if those are put aside, there is reason to believe that the anticommons argument makes a key difference in this area. I take these up in order.

As with his studies of gridlock generally, Heller overlooks the many other forces that operate in given fields. Here is not the place to discuss the many woes of the pharmaceutical industry, but it is important to note that every major policy shift in the pharmaceutical area in the last decade has reduced the returns to pharmaceutical investment. I shall just tick them off. First, the pricing end of the business is under stress. Many foreign nations pursue aggressive monopsony buying policies that reduce returns. The various government purchase plans through Medicaid have similar effects in this country, with more to come under the new Obamacare regime that adds layers of uncertainty to the overall pricing situation. These activities can be expected to reduce the return to drug companies, and with it the return for drug innovation.[83] In addition, the costs and complexity of clinical trials have vastly increased, eroding the protection otherwise available under the Hatch–Waxman Act.[84] The cost of bringing new drugs to market includes both the time value of money and the cost of compounds that fail to make the cut. A full cost estimate from 2003 places that figure at around $1.3 billion per drug[85]—a value which has to be recouped during the ten or so years of effective patent life.[86]

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83. Benjamin Zycher, *The Human Cost of Federal Price Negotiations: The Medicare Prescription Drug Benefit and Pharmaceutical Innovation* (Manhattan Inst., Ctr. for Med. Progress, 2006), *available at* http://www.manhattan-institute.org/html/mpr_03.htm.

84. *See* Drug Price Competition and Patent Term Restoration Act of 1984 (Hatch–Waxman Act), Pub. L. No. 98-417, 98 Stat. 1585 (1984). "[U]nder the 1984 Hatch Waxman Act, Congress granted patent holders limited extensions of their patent period as a partial offset to the time lost before the FDA. . . . With ever longer periods in clinical trials, this period does not come close to allowing effective patent use for the full patent term." EPSTEIN, *supra* note 24, at 160.

85. *See Pharmaceutical Price Controls in OECD Countries: Implications for U.S. Consumers, Pricing, Research and Development, and Innovation*, U.S. DEP'T

Exposure to liability has also increased with the recent amendments to the Federal Food, Drug, and Cosmetic Act ("FDCA")[87] and their judicial interpretation, leaving warnings, however thorough, exposed to the risk of being upended by state tort actions.[88] Any evaluation of overall levels of drug initiatives has to take into account these forces, which cut unambiguously against pharmaceutical innovation.

Yet, suppose we now put aside these issues to concentrate solely on the gridlock problem as it pertains to pharmaceutical innovation. As mentioned above, Heller and Rebecca Eisenberg made the original version of this claim in their 1998 *Science* article, which featured their theoretical claim that the anticommons had thwarted innovation.[89] Their article, however, could be challenged on multiple grounds. In particular, Heller and Eisenberg did not offer any empirical evidence of either the nature or extent of the anticommons problem. In *The Gridlock Economy*, Heller reports his conversations with an anonymous head of a "Big Pharma" drug maker who told him "that his lab scientists developed the potential cure (call it Compound X) [for Alzheimer's] years ago, but biotech competitors blocked its development."[90]

This statement leaves more questions open than it answers.

First, any (anonymous) claim for a potential cure for Alzheimer's has to be greeted with a grain of salt. That disease is a composite condition, no doubt as complex to understand as cancer, and for which there is still no magic cure. Compound X may have helped manage some portion of the disease, but hardly all of it. Nor does any statement about one firm address the question of whether other pharmaceutical companies have continued to pursue research in this area.[91] If it were that kind of blockbuster, the amount of money on the table would surely have spurred some key players into action.

Second, Heller offers no explanation as to how biotech *competitors* could exert this power under the current law. By definition, the competitors are pursuing *alternative* approaches to the disease. But what this company needed was the complementary technologies and compounds not controlled by competitors. Nor is it clear that, for each stage in the process, there is one and only one compound or tool that will do the trick. There would be no holdout problem for research components that were competitively supplied.

COMMERCE, INT'L TRADE ADMIN, 30–31 (Dec. 2004), http://www.ita.doc.gov/td/chemicals/drugpricingstudy.pdf.

86. As a result of increased time delays in both clinical trials and the FDA approval process, "the average useful commercial life today is under ten years, or less than half the basic patent life of twenty years." EPSTEIN, *supra* note 24, at 160.

87. *See* Food and Drug Administration Amendments Act of 2007 (FDAAA), Pub. L. No. 110-85, 121 Stat. 823 (2007) (codified as amended in scattered sections of 21 U.S.C.).

88. *See* Wyeth v. Levine, 129 S. Ct. 1187 (2009) (applying the FDAAA).

89. Heller & Eisenberg, *supra* note 2.

90. HELLER, *supra* note 1, at 4–5.

91. For some sense of the scope of current research, both basic and applied, see *Networking for a Cure,* ALZHEIMER RESEARCH FORUM, http://www.alzforum.org/ (last visited Sept. 11, 2009).

Third, Heller makes no reference to the body of empirical literature that cuts in the opposite direction on this point. In one study published in *Science*, John Walsh, Ashish Arora, and Wesley Cohen[92] surveyed seventy attorneys, scientists, and managers who were active in the pharmaceutical and biotech industries. Their research goal was to assemble evidence that indicated the magnitude of the anticommons problem in biotechnology. The findings, however, revealed that almost none of the recipients claimed that the current legal patent regime posed insurmountable obstacles to their research. In both industry and university labs, researchers adopted strategies of "licensing, inventing around patents, going offshore, the development and use of public databases and research tools, court challenges, and simply using the technology without a license (i.e., infringement)" to achieve their particular goals.[93] A few years later, the verdict was unchanged, as Walsh and his colleagues reported empirical results that demonstrated that "access to patents on knowledge inputs rarely imposes a significant burden on academic biomedical research."[94] In reaching this conclusion, Walsh observed, as Heller reports, "that 29 percent of recently executed material transfer agreements had reach-through claims, 16 percent provided for royalties, and 26 percent imposed publication restrictions. In areas with intense commercial interest, 30 percent of researchers surveyed did not receive the last biological research materials they requested."[95]

Heller takes a less sanguine view of these results than did the authors of the study. He wonders whether it makes sense to move research offshore to avoid patent claims.[96] My own reaction is that it hardly matters, provided the ultimate commercial products are brought back. Indeed, I am more concerned about chasing offshore research through the very exacting domestic standards associated with animal care and clinical studies. Unlike Heller, I am not particularly concerned that American patent law does not allow any special research exemption for the use of patented products.[97] There are perfectly good explanations as to why

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92. John P. Walsh, Ashish Arora & Wesley M. Cohen, *Working Through the Patent Problem*, 299 SCIENCE 1021, 1021 (2003) [hereinafter Walsh et al., *Working Through the Patent Problem*]. For the longer study, see John P. Walsh, Ashish Arora & Wesley M. Cohen, *Effects of Research Tool Patents and Licensing on Biomedical Innovation*, *in* PATENTS IN THE KNOWLEDGE-BASED ECONOMY 285–340 (Wesley M. Cohen & Stephen A. Merrill eds., 2003).

93. Walsh et al., *Working Through the Patent Problem*, *supra* note 92, at 1021.

94. John P. Walsh, Charlene Cho & Wesley M. Cohen, *View from the Bench: Patents and Material Transfers*, 309 SCIENCE 2002, 2003 (2005) (reporting empirical evidence against the Heller–Eisenberg hypothesis). *See also* Timothy Caulfield et al., *Evidence and Anecdotes: An Analysis of Human Gene Patenting Controversies*, 24 NATURE BIOTECHNOLOGY 1091, 1092 (2006).

95. HELLER, *supra* note 1, at 66–67 (citing Walsh et al., *supra* note 94).

96. *Id.* at 67.

97. Madey v. Duke University, 307 F.3d 1351, 1362 (Fed. Cir. 2002) (holding there is no experimental use defense to infringement if "act is in furtherance of the alleged infringer's legitimate business and is not solely for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry"). It is instructive that this dispute arose in the atypical context of a researcher switching universities, not in the context of one research unit using the patented materials of a second. It therefore suggests that the standard situations where

that practice is likely to continue in the future. Typically, medical researchers are not in direct competition with the patent holder insofar as they do not attempt to sell the patented technology or product on the market. Instead, their research has positive spillover effects for the patent holder. If it reveals good information, it allows the patentee to extend sales to new markets. If it reveals bad information, it allows the patentee to take steps that could avoid costly liability suits, recall actions, and the like. The empirical evidence could never dismiss all instances of gridlock, but in the larger picture, gridlock is not a first order question.

Walsh's other findings are consistent with a high level of commercial activity, which does not suggest gridlock. The use of "reach-through" licenses that allow the patent holder to collect royalties based on the revenues that a licensee receives from its licenses makes good commercial sense. One of the greatest difficulties with scientific research lies in the value of the licensed technology. The reach-through license avoids the need to make front-end estimates of future revenues and thus allows for the use of subsequent information to determine compensation at a later date. Indeed, the recent decision of the United States Supreme Court in *Quanta Computer, Inc. v. LG Electronics, Inc.*,[98] curbing patent-holder control of downstream buyers of products embodying their patents, could easily undercut the flexibility of licensing agreements in ways that could impede growth.[99]

Finally, the refusal to give information for free is no surprise in any commercial context, however common it might, and should, be in connection with basic research. No firm is required to share trade secrets, and forced sharing agreements would make it less likely that we would produce the desired information in the first instance. The empirical evidence, thus, does not support the view that we have a crisis on our hands that research scientists somehow overlook.[100] The same result emerges when viewed from a theoretical perspective. The story of Compound X takes place against a backdrop in which other firms had already developed the patented technologies that this company wanted. But why were those products developed in the first place? Heller is right to acknowledge that the expansion of ownership rights in patented materials starting with *Diamond v. Chakrabarty*[101] in 1980 led to the infusion of huge amounts of investment into medical research, more generally.[102] This illustrates the positive side of the

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products by one lab are used in research by another generates no practice obstacles to development.

98. 553 U.S. 617, 638 (2008) (holding that Intel's sale to Quanta of products embodying the LGE patents for which Intel had a license "took its products outside the scope of the patent monopoly," and LGE could "no longer assert its patent rights against Quanta").

99. For my discussion of these points, see Richard A. Epstein, *The Disintegration of Intellectual Property? A Classical Liberal Response to a Premature Obituary*, 62 STAN. L. REV. 455 (2010).

100. HELLER, *supra* note 1, at 67 ("[S]urveying scientists just isn't likely to reveal systematic gridlock.").

101. 447 U.S. 303, 318 (1980) (holding that the patentee's microorganism was patentable subject matter, despite that it was a "living" thing).

102. HELLER, *supra* note 1, at 60 fig.3.4.

investment equation; exclusive rights spur innovation. In addition, Heller makes one brief reference to the Bayh–Dole Act,[103] which requires universities that receive government grants to pursue, if circumstances warrant it, patenting opportunities for their products with a view toward their commercialization. In general, putting inventions into the public domain should be expected to increase utilization because no one has to enter into any transactions to utilize that material. There is ample reason why everyone agrees that mathematical formulae and laws of nature always fall in the public domain no matter who discovers them. Some ask, why then use Bayh–Dole to enhance privatization when it necessarily increases the likelihood of some patent blockade?

It is hard to give a definitive answer to that question, but here is one possibility. The commercialization of valuable compounds is expensive business. Once a compound falls into the public domain, each company that seeks to commercialize it is likely to keep its research activities secret, which means that other potential participants in this space may be leery about moving into an already crowded space. On the other hand, when a drug is patented, the firm with the patent can eliminate one dimension of uncertainty from its calculation. To be sure, it is only one dimension; no patentee can be certain whether some substitute technology is in development and subject to trade secret law, or how well patentees of other products are doing with their research on substitute products. However, the additional flow of investment dollars into patent research from Bayh–Dole suggests that there must be at least some force in operation to account for the spur.[104] Fortunately, in this regard, the narrow decision of the United States Supreme Court in *Bilski v. Kappos* has eased this tension in the short-run.[105]

There are, moreover, good theoretical reasons to doubt the claims of doom that arise in the drug area. Bruce Kuhlik and I have argued that Heller and Eisenberg fundamentally misconceive the nature of the problem by treating the context of drug innovation as though it involves the same political dynamics that are found in permit cultures.[106] More specifically, Heller's own work refers to the

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103. 35 U.S.C. §§ 200–212 (2006); HELLER, *supra* note 1, at 58. *See generally* Rebecca S. Eisenberg, *Public Research and Private Development: Patents and Technology Transfer in Government-Sponsored Research*, 82 VA. L. REV. 1663 (1996) (discussing the cross currents in licensing practice).

104. Arti K. Rai & Rebecca S. Eisenberg note the "unprecedented levels" of investment and significant acceleration of the patenting trend after passage of Bayh–Dole. Arti K. Rai & Rebecca S. Eisenberg, *Bayh-Dole Reform and the Progress of Biomedicine*, 66 LAW & CONTEMP. PROBS. 289, 291–92 (2003). However, Rai and Eisenberg ultimately worry about the progress of science. *Id.*

105. 130 S. Ct. 3218 (2010) (making no general statement on patent eligibility).

106. *See* Richard A. Epstein & Bruce N. Kuhlik, *Is There a Biomedical Anticommons?*, 27 REGULATION 54, 54–55 (2004); *see also* F. Scott Kieff, *On Coordinating Transactions in Intellectual Property: A Response to Smith's Delineating Entitlements in Information*, 117 YALE L.J. POCKET PART 101, 106, 108–09 (2007), *available at* http://www.innovation.hoover.org/media/File/Kieff%20Coordination%20Property%20and%20IP%20at%20117%20Yale%20Law%20Journal%20Pocket%20Part%20101%20in%202007.pdf (noting the mechanisms for voluntary exchange, which include simple "freezer" dispensations of biological reagents at low price).

corrupt permit system that keeps storefronts empty in Moscow, Russia.[107] But patents generate different incentives. Patent holders are owners of their inventions. They are not rogue government agents who seek to divert public revenues to private gains. Their decision not to license to a particular party is likely to be a profit-making decision, not an invitation to take a bribe. Unlike storefronts, drugs are wasting assets, disappearing relentlessly over time. Either a firm enters into deals quickly or it finds itself without a revenue stream. Under such circumstances, parties work overtime to make sensible alliances dealing with anything from a single product to an entire line of products. A patent pool, whereby patent holders agree to license to one another, is, of course, one device that can mitigate holdup over a wide range of patented technologies. But all patent pools are not created equal. The current Department of Justice rules make good sense insofar as they are willing to allow patent pools that contain complements, yet are suspicious of pools that contain product substitutes, which could become disguised cartelization subject to the antitrust law.[108]

The Department of Justice position is a welcome change from earlier government activities, which attacked procompetitive pooling arrangements under the antitrust laws. Consider, again, the different configurations of tollbooths on the Rhine River. Those that are in series create problems, while those that are in parallel do not. From the antitrust perspective, merger among different gatekeepers operating in series should be welcomed, while mergers of different gatekeepers operating in parallel should be subject to far greater scrutiny. Failure to recognize that distinction in *United Shoe Machinery* led to sixty-nine years of nonstop litigation by the United States against United Shoe, which had merged thirty different firms who held sequential patents on various stages of the shoe manufacturing process.[109] This vertical merger was an effective device to eliminate a Rhine River problem. Over its lifetime, the merger delivered great efficiencies to United Shoe's customers, who never complained about the excellent service and the high levels of innovation, which allowed United Shoe to keep a large market share. The great achievement of the Department of Justice was to break up the firm

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107. HELLER, *supra* note 1, at 143–64.

108. *Antitrust Guidelines for the Licensing of Intellectual Property*, U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, § 5.5 (Apr. 6, 1995), http://www.usdoj.gov/atr/public/guidelines/0558.htm.

109. The major decision in the case was written by Judge Wyzanski. United States v. United Shoe Mach. Corp., 110 F. Supp. 295 (D. Mass. 1953). The number of actual mergers is unclear, but the Government alleged thirty instances of "disabling actual or potential competitors by the acquisition of their assets and the employment of their key men." *Id.* at 307. The deadly blow against the firm came in *United States v. United Shoe Machinery Corp.*, 391 U.S. 244, 251–52 (1968) (remanding with an effective order to break-up the company). For discussion, see RICHARD A. EPSTEIN, ANTITRUST CONSENT DECREES IN THEORY AND PRACTICE: WHY LESS IS MORE 40–53 (2007). For further criticism, see HERBERT HOVENKAMP, THE ANTITRUST ENTERPRISE 301 (2005) (noting the destruction, and describing the *United Shoe* decree as "poorly structured"), and Robert W. Crandall, *Costly Exercises in Futility: Breaking Up Firms to Increase Competition* 5 (AEI-Brookings Joint Ctr. for Regulatory Studies, Working Paper No. 136, 2003), *available at* http://regulation2point0.org/wp-content/uploads/downloads/2010/04/phpAi.pdf.

into unsustainable units just when foreign competition was heating up.[110] The lesson here is that vertical integration may be a sensible response to the patent holdup problem, as is free entry of new firms from overseas.

In this regard, moreover, the arrival of new patented technologies should not be viewed as necessarily creating a denser patent thicket. To revert to the earlier images, the current patent map contains patents that operate both in series and in parallel with each other. So the relevant question is whether the new patent adds a new alternative or simply lengthens an established chain. The latter is odd because, even with the new patent, businesses are free to use the strategies they adopted before. On the other side, the arrival of a new patent could allow for an alternative pathway to production that displaces several patents previously used in series with each other. It is as though the new patent supplies an interstate highway for a single toll, supplanting the maze of surface streets previously used. We know that the rate of patent innovation continues to be strong, which could not be the case if the thicket were an obstacle to—and not an opportunity for—production. The Alzheimer's Compound X story that Heller refers to, with all its infirmities, does not seem to describe the overall state of the industry.

All this is not to say that we do not have instances in which the current patent law has been misapplied in ways that block technical innovation. Let me allude to two cases that raise these issues. The first has to do with the BRCA1 and BRCA2 gene mutations dealing with breast cancer risk, for which, as Heller rightly points out, Myriad Genetics holds a single patent that has impeded scientific research.[111] The particular complaint is that Myriad's exclusive use of the patent for the BRCA genes has prevented other companies from using their (patented) "home-brew" tests for detecting the gene in situ. At present, the attack on the BRCA was accepted in a lengthy opinion by Judge Robert Sweet in the Southern District of New York,[112] and the matter is now before the Federal Circuit, with high stakes. Obviously, the problem here is not gridlock, as Heller acknowledges. What is needed is an explanation why this particular patent application should be regarded as dubious, even if most gene patents should be fully protected.

The fuller story goes as follows. As a matter of first principle, it looks as though the BRCA genes are natural substances that are not patentable as "laws of nature, physical phenomena, and abstract ideas . . . ."[113] An exception to that general rule was developed as early as 1911 in *Parke-Davis & Co. v. H. K. Mulford Co.*, in which a Japanese scientist, Jokichi Takamine, had assigned to Parke-Davis a patent for the isolation and purification of adrenalin.[114] No one doubted that the process whereby the isolation and purification had taken place was protected. The novel move in *Parke-Davis* was that Judge Learned Hand

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110. EPSTEIN, *supra* note 109, at 52.

111. HELLER, *supra* note 1, at 76.

112 Ass'n for Molecular Pathology v. U.S. Patent & Trademark Office, 702 F. Supp. 2d 181, 238 (S.D.N.Y. 2010).

113. Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

114. 189 F. 95, 97–98 (S.D.N.Y. 1911), *aff'd in part, rev'd in part*, 196 F. 496 (2d Cir. 1912).

sustained a patent for the composition of matter, saying: "[W]hile it is of course possible logically to call this a purification of the principle, it became for every practical purpose a new thing commercially and therapeutically."[115] In effect, this decision meant that this patent could not be circumvented by finding some alternative mode for isolation and purification, which of course increased its value. There is little doubt that the Hand decision paved the way for the development of the highly valuable recombinant DNA technologies.[116]

The difference between the standard DNA case and the BRCA genes is that Myriad Genetics has asserted that its patent covers not only the sale of synthetic BRCA genes, but also the use of that genetic site inside individual persons.[117] This claim creates a complete blockade against new invention because no one can invent around this patent if the sole objective is to treat the conditions involving that genetic site. The correct rule is narrower than that adopted by the District Court in the Myriad Genetics case. Rather than make a frontal assault on all gene patents, it should limit the *Parke-Davis* decision to the cases involving isolation and purification of a product for further sale, which is not at stake here. The work needed to locate a gene is far less than is needed to first locate and then synthesize it. The blockade that results from this extended patent coverage is far too broad. For these limited purposes only, a return to the traditional rule that it is not possible to patent natural substances seems appropriate.

A second aspect of the full story neglected by Heller is the potential patentability of gene fragments called "express sequence tags" ("ESTs"), used to identify and map new genes, which some drug companies sought to patent in droves. These claims were eventually rejected, and rightly so.[118] To the extent these ESTs are to be used in situ, the same objections derived in the context of the BRCA genes apply. For use in the laboratory, the simple approach is that any identification technique that can work by the boatload should be regarded as an obvious extension of existing technology that should not be patented. One interesting side note of the case rejecting the EST patents, *In re Fisher*, was the steps taken by Merck, which favored an open access regime to develop its complementary products. As Heller notes, Merck simply put its ESTs in the public domain by creating a Gene Index, which took the steam out of the EST

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115. *Id*. at 103.

116. *See, e.g.*, Michael S. Greenfield, *Recombinant DNA Technology: A Science Struggling with the Patent Law*, 44 STAN. L. REV. 1051, 1066–67 & nn.103, 107–08 (1992).

117. Natasha N. Aljalian, *The Role of Patent Scope in Biopharmaceutical Patents*, 11 B.U. J. SCI. & TECH. L. 1, 53–55 (2005).

118. *See, e.g.*, *In re* Fisher, 421 F.3d 1365, 1379 (Fed. Cir. 2005) (holding that the ESTs lacked specific and substantial utility). Even the Senior Vice President of Research at Genentech, Dennis Henner, conceded concerns. *See* Matthew Rimmer, *Genentech and the Stolen Gene: Patent Law and Pioneer Inventions*, 5 BIO-SCI. L. REV. 198, 207–08 (2001–02) ("If the PTO is doing its job correctly, patents will be granted only in those situations where they are warranted, and the rights under those patents will be limited to the contributions of the inventor. Likewise, a gene patent—properly examined—should not enable its owner to prevent parties from doing research, such as sequencing or studying a portion of the genome of an organism." (quoting Dennis J. Henner, Statement of the Genentech Senior Vice President of Research, Before the Subcomm. on Courts and Intellectual Property of the H. Comm. on the Judiciary, 106th Cong., July 13, 2000)).

movement.[119] The moral of this tale, however, cuts in favor of strong patent protection. It is easy for one key player to put something into the public domain. It is much harder for any company to take something out of the public domain when the patent laws are weak.

In sum, the legal rules governing the protection of patents are surely imperfect, and always in need of improvement. However, there is no evidence that we are in near-crisis mode or that any radical reformation of the law of patents is required at this time. Furthermore, there is strong reason to believe that the weakening of patent protection, along a variety of dimensions, is in fact a serious mistake.[120]

CONCLUSION

I believe that this lengthy review of *The Gridlock Economy* leads to the following overall evaluation of the work. Gridlock and anticommons are serious issues that need to be addressed in any comprehensive examination of property arrangements. But they must also be kept in perspective in at least five ways. First, many of the serious distortions in the current economy have little or nothing to do with gridlock. Just the massive programs of government subsidy in the health, real estate, agricultural, and energy markets are, in aggregate, far greater than the issues here. Next, in many instances, as in labor and real estate markets, the government takes an active, if perverse, role in the creation of economic gridlock by offering legal protection to monopolies (the labor case) or extensive permit powers to government officials (the real estate case). In labor markets, the second area of error, a return to competitive structures could be accomplished easily if we had the will to do it—which we do not. In real estate markets, the third area, massive simplification of the permit process is possible so long as we are prepared to reduce the class of externalities that we think call for public action and defer the granting of remedies until these harms are imminent. Once again, political rather than intellectual issues are the largest impediments. Fourth, in other markets, most notably markets in the broadcast spectrum, the true culprit is single government ownership that can in no way be described as gridlock. And last, the complex patterns of gridlock that from time to time appear in connection with intellectual property rights, especially with patents, must be put in perspective. At no point could these be regarded as the sole source of uneasiness in the pharmaceutical industry, given the other movements on pricing, liability, and clinical trials that have impeded drug innovation. Even when the gridlock problem does arise, it is often a second order issue that pales in significance to the huge boost to investment that strong property rights create in intellectual property. Thus, the bottom line is this: private property creates the occasional gridlock, but government ownership and regulation create far more. Heller should therefore recognize that the second half of his title does not follow from the first. Indeed, he gets everything backwards. The correct title is less spectacular but more accurate: The Gridlock Economy: How Too Much Government Ownership and Regulation Wrecks Markets, Stops Innovation, and Costs Lives.

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119. HELLER, *supra* note 1, at 61.
120. For my longer critique, see Epstein, *supra* note 99.