4-1-2003

Selling Mayberry: Communities and Individuals in Law and Economics

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Institute for Law and Economics
Research Paper No. 03-08

Public Law and Legal Theory Research Paper Series
Research Paper No. 28

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April 2003

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ABSTRACT

The small village of Cheshire, Ohio was recently acquired in its entirety by the firm whose giant power plant, located at the edge of town, caused it serious pollution problems. Although the plant was worth substantially more than the town, this was not a simple Coasean bargain. This paper combines an ethnographic methodology with theoretical insights from law and economics to present an empirical and theoretic challenge to the standard account of nuisance disputes. We explore the transaction in detail and explain what prevented collective action and holdout problems that are usually thought to hinder bargaining with groups. Specifically, we show how incorporating the role of community into conventional theory offers a new understanding of the likelihood of holdouts, the importance of community dynamics, the interdependency of community-wide nuisance actions, and the role of the law of takings.

Key Words: pollution, nuisance, property, torts, community, externalities, takings

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INTRODUCTION

"We used to be like *Mayberry*"[1]
"A little village is a big family—Cheshire."[2]
"[T]here is no such thing as society. There are individual men and women, and there are families."[3]

The problem of industrial pollution has been a major impetus for the ascent of law and economics.[4] Beginning with Pigou,[5] law and economics scholars have taken turns at tackling this issue, producing a voluminous body of theoretic literature.[6] In large part, however, the theory has been developed through highly stylized examples or the analysis of a few classic legal cases,[7] with relatively little attention paid to the complex behavioral responses that pollution cases engender in the real world.[8] While the economic analysis of pollution has been enormously influential, both in terms of theory and policy,[9]

[1] Jennifer Harrison, Town Clerk of Cheshire, Ohio, phone conversation, June 25, 2002 describing what the community was like before the buyout proposal [hereinafter: Harrison I]. For those not familiar with the history of American television, Mayberry, N.C. was the bucolic fictional town featured on *The Andy Griffith Show* from 1960-68. A spin-off, *Mayberry, R.F.D.* ran until 1971.

[2] Embroidered sampler we observed in the home of Cheshire residents Jim and Eva Rife, Feb. 10, 2003.

[3] Prime Minister Margaret Thatcher, quoted in WOMEN'S OWN, October 31, 1987.

[4] *See e.g.,* Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?* 111 Yale L. J. 357, 367-83 (2001) (discussing the centrality of pollution and nuisance disputes in the law and economics literature). For a broader environmental perspective on the problem of pollution, *see* William F. Baxter, PEOPLE OR PENGUINS: THE CASE FOR OPTIMAL POLLUTION (1974).

[5] Arthur C. Pigou, THE ECONOMICS OF WELFARE 172-203 (4th ed. 1948, 1960) (proposing internalization of externalities by taxation)

[6] We review the main contributions in Part II, *infra.*

[7] The two real world cases that substantially influenced law and economics scholarship were *Boomer v. Atlantic Cement Co.*, 257 N.E.2d 870 (N.Y. 1970), where the New York Court of Appeals denied pollution victims injunctive relief and instead awarded them damages, and *Spur Indus. Inc. v. Dell E. Webb Dev. Co.*, 494 P.2d 700 (Ariz. 1972), in which the court enjoined a feedlot from continuing its operation, but ordered that a developer representing residents indemnify the tortfeasor for the cost of moving or shutting down.

[8] Robert C. Ellickson's ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES (1991), although not about pollution, is one exception. Another is Daniel Farber's extended study of the events in *Boomer v. Atlantic Cement Co*., 26 N.Y.2d 219, in PROPERTY LAW AND LEGAL EDUCATION 7 (Peter Hay & Hoeflich eds. 1988).

[9] Market-based environmental policies such as tradable emissions permits have had a significant influence on policy and generated important efficiencies in pollution

the analysis has been conducted entirely from a perspective of methodological individualism. That is, victims in pollution disputes—as is generally true of actors in law and economics—are seen as acting independently of each other, with no interdependencies and no sense of social embeddedness. While we acknowledge that the Thatcherite assumption of atomistic individualism can be powerful and productive in many cases, we argue that it is a highly incomplete description of human behavior, one that can be misleading in some important settings.

One such setting is the subject of this paper—the unprecedented buyout of the entire town of Cheshire, Ohio, by American Electric Power (AEP), whose large coal-fired power plant, located at the edge of the town, was a significant source of pollution affecting the town's residents. The Cheshire buyout presents an anomaly to standard economic theorizing, which predicts a bargaining failure in settings involving multiple victims due to holdout problems.[10] Yet in Cheshire the polluter successfully transacted with 90 property owners without encountering any real holdouts. In attempting to understand what happened in Cheshire, we spent nearly a year following the buyout as it unfolded. We visited the town, conducted interviews with residents and local journalists who covered the case, and tracked the story in the media. Our goals were to understand what accounted for the unusual outcome in Cheshire, to evaluate the merits of the buyout deal, and to explore the implications of this case for economic theory and legal policy.

In this Article, we argue that the standard law and economics account—which ignores the importance of community—leads to errors in both the positive and normative analyses of what happened in Cheshire. As with Ellickson's investigation of Shasta County, we posit that what seems on first glance to be a neat Coasean solution to an externalities problem turns out, on closer examination, to look nothing like what conventional theory predicts.[11] However, the

cleanup. See, e.g., Robert N. Stavins, *Market-Based Environmental Policies*, in PUBLIC POLICIES FOR ENVIRONMENTAL PROTECTION (Paul R. Portney & Robert N. Stavins eds., 2000).

[10] *See Generally,* Richard A. Posner, ECONOMIC ANALYSIS OF LAW 69 (5th ed. 1998); Guido Calabresi & Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1119 (1972).

[11] Ellickson, *supra* note 8. This Article is written in the spirit of Ellickson's pioneering ethnographic approach to law and economics. As with his epic study, our goal is to explore the complex story of how a single community coped with a legal

lessons of this paper are not merely negative: we also demonstrate how the existence of communities can be incorporated into a law and economics framework, with important implications for tort, property and bargaining theory.

Since Coase's classic article on the Problem of Social Cost,[12] economists have identified high transaction costs as the key barrier to the efficient internalization of externalities such as pollution. The plant whose pollution was at issue in Cheshire comprises 2 of the world's largest coal-fired electric generators; it seems likely that it is worth much more to the AEP than the town was to its occupants. The efficient solution to the problem of the plant's pollution is therefore not to shut down the plant, but 'move' the town; and this is precisely what has happened.

According to Calabresi and Melamed, however, in cases involving multiple parties such as public nuisances, efficiency calls for liability rule protection—damages.[13] In such instances, property rule protection (injunctive relief) would invariably create holdout or collective action problems, and efficient allocation of resources would be thwarted.[14] That's the standard law and economics justification for

dispute and to demonstrate the theoretical significance of what happened on the ground.

The Cheshire buyout may also hold immediate practical importance, as there have been several reports of attempts to induce similar buyouts by polluters. See, e.g., Rita Price, *Residents Of Village Near Power Plant Fear Repeat Of Cheshire,* COLUMBUS DISPATCH, June 16, 2002 at B10 (describing town of Moscow, OH, located near a coal-fired electric plant using the same SCR technology as Gavin, and suggesting that some residents favored a buyout); Jim Belshaw, *Don't Fight It, Buy It*, ALBUQUERQUE JOURNAL, August 14, 2002 at B1 (suggesting Intel should buy the town of Corrales, New Mexico in order to solve pollution problems from its plant there); Dale F. Sorget*, Sempra Plan Spells Loss for Homeowners*, SOUTH BEND TRIBUNE, August 8, 2002 at A11 (proposing that Sempra Energy buy homes near its plant in Lake Township, Michigan that lost value because of the plant's construction and operation); Marego Athans, *Elderly Residents, Town To Share Their Last Days,* BALTIMORE SUN, November 11, 2002 at A1 (quoting residents of W. Virginia, across the river from Cheshire, who are attempting to generate a buyout by AEP for their properties).

[12] Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960).

[13] *See e.g.* Calabresi & Melamed, *supra* note 10, at 1125-27; *also* Richard A. Posner, ECONOMIC ANALYSIS OF LAW, at 56-57, 70 (4th ed. 1992) (discussing the "conventional wisdom" favoring property rules where transaction costs are low, and liability rules where transaction costs are high).

[14] *See* Posner, *supra* note 10, at 69 (pointing out that "the costs of transacting are highest when elements of bilateral monopoly coincide with a large number of parties to the transaction" and listing the case of "homeowners [who] have the right to be free from pollution" as the paradigmatic example).

the landmark case of *Boomer v. Atlantic Cement,*[15] where the New York Court of Appeals changed the nature of the residents' protection from injunction to damages.

A similar logic should have applied to Cheshire. In order for the plant to continue polluting, it had to buy out *all* the residents. Suppose each of the roughly 90 houses was worth $150,000 to its owner (for a total of $13.5 million), and that the cost of abating the pollution was $100 Million to AEP. There is thus a potential 'surplus' from moving the houses of $100 - 13.5 = $86.5 million. However, if 89 homeowners have already agreed to sell at $150,000, the last owner can hold out for a much higher price—say , $50 Million--knowing that it will always be rational for AEP to pay this amount rather than forego whatever surplus it would get if it could close the deal. Since *each* homeowner should reason this way, the standard law and economics analysis suggests that what happened in Cheshire would never take place.

While the standard account does recognize the possibility that there are multiple victims of pollution, it assumes that nothing else is at stake in a pollution dispute besides the harms to individual property values or health. To the contrary, this paper is about what happens to the law and economics of pollution control when we allow for the possibility that victims may have an interest in a common asset—"community"—that is also harmed by the polluter's actions.

That communities are valuable to people should come as no surprise.[16] This is a key finding of a vast ethnographic literature, and

Ellickson & Bean report, however, that there appear to be many more land assemblages than theory would predict or than most scholars seem to believe. *See*, Robert C. Ellickson & Vicky Been, LAND USE CONTROLS, 1029-1040 (2002). For an alternative mechanism for overcoming holdouts, *see* Michael A. Heller & Rick & Rick M. Hills, *The Art of Land Assembley*, (unpublished manuscript) (on file with authors).

[15] 257 N.E.2d 870 (N.Y. 1970). For discussion of the theoretic significance of the case *see* Abraham Bell & Gideon Parchomovsky, *Pliability Rules,* 101 MICH. L. REV. 1, 38-39 (2002).

[16] Of course, it has long been recognized that certain kinds of local public goods require many agents for their production. For example, collective action may be necessary to maintain irrigation facilities, conduct political activity to overturn Jim Crow laws, or establish a town commons (and then to prevent overgrazing of cattle on the common property). Communities are thus useful for controlling the inefficiencies of collective action problems, which would otherwise lead atomistic individuals to free-ride on the efforts of others or to over-exploit commonly-owned resources. See, for example, ELINOR OSTROM, GOVERNING THE COMMONS: EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990).

resonates well with much common experience.[17] But community is a special kind of asset, one whose value depends on the contributions of every individual who makes up the group. If one individual exits—for instance, because of the community's pollution problem—she diminishes the value of the community for all those who remain. Hence, we are led to characterize the presence of community as a kind of positive externality, and to argue that this externality can exercise a profound effect on the outcomes of economic transactions (including pollution disputes).

The Cheshire buyout offers strong support for the importance of community in the lives of the village's residents. In the analysis that follows, we document the significant ties that many Cheshire residents—some with ancestral connections going back 200 years—felt for their village. We suggest several explanations for what made the community so valuable, and then argue that this fact explains important aspects of the Cheshire story that would otherwise be puzzling. In particular, we argue that the overlooked presence of "community externalities"—strong interdependence among the utility functions of residents of the village—can account for why essentially everyone in the village decided to sell, despite the conventional wisdom that bargaining with groups invariably leads to holdouts and other high transaction costs. Community ties also explain how the

Communities are also valuable as a source of norms that ensure trustworthy behavior when legal sanctions are ineffective or unavailable, thereby allowing economically valuable transactions to take place. Lisa Bernstein, *Opting Out Of the Legal System: Extralegal Contractual Relations In the Diamond Industry*, 21 J. LEG. ST. 115 (1992). Robert D. Putnam, MAKING DEMOCRACY WORK: CIVIC TRADITIONS IN MODERN ITALY (1993); Janet Tai Landa*, A Theory of the Ethnically Homogeneous Middleman Group: An Institutional Alternative to Contract Law*, in TRUST, ETHNICITY, AND IDENTITY 101 (Janet Landa ed., 1994).

Of course, the down-side is that communities may also enforce 'bad' norms such as racial segregation. See, e.g., HORTENSE POWDERMAKER, AFTER FREEDOM, 23-55 (1939) (cultural enforcement of Jim Crow norms), or Richard H. McAdams, *Cooperation and Conflict: the Economics of Group Status Production and Race Discrimination*, 108 HARV. L. REV. 1003 (1995) (same).

[17] For a tiny sample, see Kai Erickson, EVERYTHING IN ITS PATH (1978) (destruction of Buffalo Creek, W.Va. by flood, stressing loss of community); Alan Ehrenhalt, THE LOST CITY: DISCOVERING THE FORGOTTEN VIRTUES OF COMMUNITY IN THE CHICAGO OF THE 1950'S (1995) (reconstructing the texture of life in Chicago neighborhoods); Robert D. Putnam, BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY (2000) (statistical documentation of decline in civic engagement); Isabel Wilkerson, *350 Feet Above Flood Ruins, A River Town Plots Rebirth*, N.Y. TIMES, October 31, 1993 at A1 (recounting story of Valmeyer, Il., which was bought by the government because it was in the flood plain of the Mississippi river but reconstituted itself in its entirety on higher ground).

town was able to overcome the collective action problem that theory predicts should undermine attempts to organize any concerted political or legal struggle. Finally, community ties also suggest that efficiency-minded policymakers should be wary of approving community buyouts. Even though the Cheshire deal was nominally voluntary, it is likely that the buyout undercompensated at least some residents.

The Cheshire case holds five other normative implications for legal scholarship and policy that extend far beyond our case study. The first concerns the importance of law and legal doctrines in shaping bargaining. Law and Economics scholars conventionally assume that settlement negotiations occur "in the shadow of the law," meaning that parties bargain to roughly the same result that would occur if the dispute were pursued to a final adjudication.[18] We found little evidence that this was true in Cheshire. Concerns over health risks, delays, the disappearance of community, publicity—all these were important motivating factors in the decisions of residents we spoke to or read about. But as we describe below, there was very little evidence that anyone's decision to sell turned on whether it was possible to get an injunction or merely sue for damages. In short—*a la* Ellickson—formal law seemed to matter much less in Cheshire than a number of other more pressing forces.

A second implication concerns the possibility of coercive bargaining. When a community is not viable at a smaller scale than that at which it is currently operating, an offer to buy out some of the residents may cause the community to unravel. Knowing that their homes will be worthless if others decide to leave, even homeowners who would prefer not to sell may be forced to do so. The process is analogous to coercive tender offers, and to models of tipping and resegregation in the residential housing markets, as we explain below. While such coercion has the advantage of reducing holdouts, it may lead to undercompensation of sellers.

Cheshire suggests another important insight about the choice of remedies in nuisance disputes. Standard analysis of nuisance law treats the choice of remedy as exogenous to the parties in the

[18] Robert Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950 (1979). Settlement agreements should thus track legal entitlements, with the advantage that neither side has to bear the costs of litigation.

dispute.[19] The decision whether to grant an injunction or damages lies exclusively with the court; the polluter and victims, through their actions, have no control over it. An important insight that emerges from our analysis is that this characterization may be inaccurate. We argue that polluters can greatly reduce the likelihood that a court would grant the residents an injunction. A fundamental principle in the law of injunctive relief is that an injunction is an extreme remedy that should be granted only when damages cannot adequately compensate the plaintiff.[20] In other words, there is a lexical ordering between the two remedies: an injunction should be granted if and only if damages fail to redress the plaintiff's injury. This rule may enable polluters to preempt the possibility of an injunction by making an above-market buyout offer to the residents. If the majority of the residents accept this offer, the polluter is an excellent position to argue, if sued, that damages are fully compensatory, and thus no injunction should issue.

This finding opens the door to the possibility of "private takings."[21] In future instances, polluters might structure tender offers to achieve the same result. For example, a polluter could offer to buy 60% of the affected properties for an above market price.[22] If the remaining 40% of the town is not viable on its own, all residents will have an incentive to sell; indeed, they will compete for the right to sell to the polluter. Of course, the remaining residents could still sue for nuisance, but all they should be able to get is damages. They may

[19] *See* discussion in Part V, *infra.*

[20] See *Developments in the Law-Injunctions*, 78 HARV. L. REV. 994, 997-1021 (1965). Douglas Laycock suggests that this maxim is more honored in the breach than in the observance; the easier it is for plaintiffs to secure an injunction, however, the more perplexing it is that no one sought to do so in Cheshire. *See* Douglas Laycock, THE DEATH OF THE IRREPARABLE INJURY RULE (1991).

[21] It has been suggested that allowing a nuisance-causer to pay damages rather than face an injunction permits an "inverse condemnation [, which] may not be invoked by a private person or corporation for private gain or advantage. Inverse condemnation should only be permitted when the public is primarily served in the taking or impairment of property." *Boomer v. Atlantic Cement Co*., 26 N.Y.2d 219, 230 (Jasen, J., dissenting) *(citation omitted)*. For excellent discussion of private takings, *see* Abraham Bell, *Private Takings* (S.J.D. Dissertation, Harvard Law School) (on file with authors).

[22] The polluter might also make an offer to buy 100% of the affected properties. Offering to buy a lower percentage induces competition among the sellers and increases the coercive element of tender offers. Of course the polluter may announce that she is only going to buy 60%, and then if a larger percentage of the residents agrees to sell, buy from them all.

get the same deal as the first 60% (albeit at a higher cost), and might even do better. But from the polluter's vantage point, that would still constitute a victory. For the polluter, the name of the game is to avoid the risk of an injunction. Preempting the injunction eliminates the potential of the residents to hold out, and guarantees a sale on advantageous terms for the polluter.

A fourth set of insights from the story of Cheshire concerns the theory of holdouts. Classic holdout settings involve indivisible projects such as the construction of a new interstate highway, for which the Federal government must acquire all the properties along the planned course. In such a case, any single owner can block the entire project by refusing to sell. Pollution and other nuisance cases are different since the nuisance-causer does not have to acquire title to all affected properties to carry out its operations, once the threat of an injunction has been neutralized. Yet, the term holdout is currently being used fairly loosely to refer to every instance in which a person refuses to deal for whatever reason. This colloquial use fails to capture the very essence of the phenomenon, a strategic attempt to extract rents. For example, in Cheshire, two older residents chose not to accept AEP's buyout offer. Both owned valuable river-front land, and both had strong sentimental attachment to their properties. These residents should arguably not be labeled holdouts, however, because they simply placed high idiosyncratic value on their properties. Their refusal to deal was not accompanied by any meaningful action to extract a better offer from the buyer. Thus, we propose that such people might better be termed "hold-ins."

Finally, our analysis of community externalities suggests a revision in the law of Takings. Currently, Takings doctrine applies the same compensation rule to all exercises of eminent domain. The existing rule entitles owners whose property was taken to receive fair market value; owners of adjoining properties are ineligible for compensation. Furthermore, the number of properties taken is irrelevant to the calculation. The uniform treatment of all takings may lead to gross under-compensation when community externalities exist. As an objective compensation measure, fair market value does not capture the subjective value property owners derive from living in a close-knit community. Worse yet, the existing rule offers no compensation for loss of community amenities to members whose

property was not physically taken.[23] Thus, when community externalities are strong, the current compensation regime would not only be unfair, but may also be inefficient. Because takers are not forced to internalize the full economic effect of their actions on communities, both the government and private corporations may involuntarily transfer property interests from the individual owners to themselves, even when doing so creates a net welfare loss. To take account of community externalities, we devise a new typology of takings by dividing the universe of takings cases into three conceptual categories: *Isolated takings*, *tippings* (in which the government condemns multiple properties in a community and thereby undermines its existence), and *clearings* (in which an entire community is uprooted).[24] We then propose a differential compensation regime tailored to compensate communities for the full range of harms inflicted by exercises of eminent domain.

Structurally, the Article consists of six parts. In Part I, we summarize the law and economics literature on pollution. Part II lays out the basic facts in the Cheshire case, and explains the challenge it presents for standard economic analysis. In Part III, we analyze in detail the legal rules that govern the allocation of responsibility for the pollution in Cheshire, and assess the likely remedies that residents could obtain if they decided to pursue legal action against the polluter. A basic assumption of law and economics is that any alternative to litigation (such as the kind of settlement that occurred in Cheshire) will take place in the shadow of the legal rules allocating liability and defining remedies, so the structure of what actually happened will inevitably be shaped by what the parties perceive their legal rights to be. Part IV documents the importance of community externalities in Cheshire. We suggest why a strong community is less likely to generate strategic holdouts, and then, in the next two parts, go on to explore the importance of our findings for tort and property law. Part V argues that polluters can affect the court's choice of remedy in nuisance cases. If, as we claim, polluters can forestall the use of injunctive relief by making attractive buyout offers, this opens the

[23] *See* generally Abraham Bell & Gideon Parchomovsky, *Takings Reassessed*, 87 VA. L. REV. 271 (2001) (exploring the effects of eminent domain exercises on neighboring property owners).

[24] For a classic discussion of clearings, see *Berman v. Parker*, 348 U.S. 26 (1954) (condemnation of land for redevelopment under District of Columbia Redevelopment Act).

door to the possibility of private takings, situations in which polluters can in effect force property owners to sell to them. We conclude, in Part V, by offering a novel framework for assessing Takings compensation, and exploring a mechanism for resolving collective action problems in group negotiations.

I. THE STORY OF CHESHIRE

The town of Cheshire was founded in 1834.[25] Located in southern Ohio on the banks of the Ohio River near West Virginia, it is a small village, with about 220 inhabitants (roughly 90 families) spread over 16 acres, one pizza parlor, one stoplight, and a gas station. Its nearest neighbor is roughly seven miles away.

At the edge of town is a coal-fired electricity generating plant, the General James H. Gavin facility, owned by American Electric Power (AEP). The plant is one of the largest of its kind in the world, and AEP is one of the biggest firms in the U.S., with revenues of $60 Billion in 2001. The plant's massive scale of operations is difficult to describe in words; only after visiting the place were we able to appreciate its "brooding omnipresence."[26] Surprisingly, given the small size of the town and the large size of the plant, only one resident of Cheshire worked at the Gavin facility as of 2002.

The Gavin plant has long been a significant source of emissions. According to EPA records, "[b]efore recent efforts to curb pollution, Gavin was the nation's largest source of sulfur dioxide, the main ingredient in acid rain. . ."[27] Gavin also held the dubious distinction of leading the nation in "emissions of nitrogen oxide, which creates smog, and was one of the leading sources of carbon dioxide."[28] This record has prompted AEP to take action that significantly reduced

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[25] *See,* Michael Hawthorne, *Cheshire—Death of a Village; Cleanup lags for Decades*, COLUMBUS DISPATCH, November 10, 2002 at A1.

[26] *S. Pac. Co. v. Jensen*, 244 U.S. 205, 222 (1917) (Holmes, J., dissenting) (demystifying the common law);

To get some sense—albeit an inadequate one—of the size and scale of the plant, see photo at

http://www.dispatch.com/news/news02/jun02/cheshiregallery/pages/8cheshire350x245.htm. We have also included some of our own photographs of Cheshire in an appendix to this article.

[27] *See* Hawthorne, *supra* note 25.

[28] *Id.*

total emissions.[29] The plant's efforts notwithstanding, "during 2001, Gavin ranked seventh in the nation among power plants for total emissions of carbon dioxide and 18th for nitrogen dioxide."[30]

Ironically, the very actions that have led to a drop in the level of total emissions have concentrated the remaining pollution on the plant's nearby surroundings. Jennifer Harrison, the town clerk and a Cheshire resident, told us that before 1995, the main problems were occasional fallout on vehicles, which ate through paint, and excessive noise of up to 140 dB from exhaust fans, which AEP eventually mitigated by installing mufflers.[31] She said she had an insurance claim every year for paint damage, and that dirt was always a problem. "In 1995," however, "things got much worse. That's when AEP . . . lowered the [height of the] stacks from 1100 to 800 feet."[32] Even then, only one resident sued, and his claim was settled.[33]

To be fair to AEP, it is imperative to note that an alternative method of reducing emissions of SO_2 was apparently forestalled by regulatory intervention. Circa 1989, in response to tougher pollution standards, "AEP . . . planned to switch to low-sulfur, out-of-state coal at Gavin, which it said would be less expensive. Faced with political pressure from the state's mining interests, the Public Utilities Commission gave AEP a choice: Absorb the cost of switching fuel sources, or charge ratepayers to install scrubbers designed to reduce sulfur pollution from Ohio coal."[34] It is quite likely that had AEP been able to use low-sulfur coal, the blue plume problem would have been

[29] *Id.* For example, "[t]he plant released about 5 pounds of sulfur dioxide for every megawatt hour of electricity it generated [in 2001], down sharply from the 56 pounds per megawatt hour it released in 1990."

[30] Id.

[31] Interview with Jennifer Harrison, Cheshire, Feb. 10, 2003 [hereinafter: Harrison II].

[32] Harrison I, *supra* note 1. Before the blue plume, there "'. . . wasn't anything that was a problem to us,' said Charles Reynolds, 57, who owns the bait shop. Last summer, locals did notice a problem, touched off ironically when the utility installed new pollution-control equipment." Stephanie Simon, *To Holdouts, Offer to Buy Ohio Town Is Dust in Wind*, L.A. TIMES, August 25, 2002 at 1.

[33] Harrison I, *supra* note 1.

[34] *See* Hawthorne, *supra* note 25. That environmental regulators might prefer a more-costly method of achieving a clean environment is not a new conclusion. For a pioneering analysis of the political economy of air quality regulation, see Bruce Ackerman and William Hassler, CLEAN AIR/DIRTY COAL (1981) (arguing that the EPA enforced the Clean Air Act in such a way as to protect the Eastern coal industry and its dirtier coal at the expense of Western coal producers).

much less severe.[35] Denied this alternative, however, AEP resorted to a different, technological solution.

In 2001, the plant installed a new Selective Catalytic Reduction (SCR) scrubber system designed to insure that emissions of Nitrogen Oxide (NOx) complied with the EPA's 2003 requirements for coal-fired power plants.[36] After it was installed, however, it became clear that in addition to reducing NOx emissions, the SCR actually increased emissions of sulfur trioxides (SO_3).[37] The increased SO_3 emissions were apparently caused by a complex interaction between the new scrubber and another anti-pollution mechanism at the plant that was supposed to remove sulfur from the gasses formed when coal was burned.[38]

Even though the plant has an 830-foot smoke stack, under certain weather conditions the SO_3 formed a blueish plume that settled over the town, causing a variety of symptoms in many of its residents during the summer of 2001: "people [developed] sores on their lips and tongues, nausea, vomiting and headaches."[39] Others complained of "burning eyes, blistered lips, nagging coughs and burn marks on their cars. Now and then, on muggy days, they would spot a

[35] According to Jennifer Harrison, in the summer of 2002, AEP experimented with low-sulfur coal, with very favorable results. See Harrison II, *supra* note 31.

[36] According to AEP's website, the technology had been used safely world-wide since the mid-1980s, and was the only post combustion technology that would achieve the EPA's emission standards. The SCR works by mixing ammonia into the plant's exhaust gasses. In the presence of a catalyst, the SCR is able to remove more than ninety percent of the Nitrogen Oxide. *See* http://www.aep.com/newsroom/newsreleases/default.asp?dbcommand=DisplayRelease&ID=896&Section=Corporate&colorControl=on (visited March 3, 2003).

[37] "SO_3 forms sulfuric acid when it comes in contact with water. Sulfuric acid can cause burns to the skin, eyes, lungs, and digestive tract. . . . EPA limits the amount of sulfur dioxide that can be released into the air. This limits the amount of sulfur trioxide and sulfuric acid that form from sulfur dioxide in the air. . . ." *See*, http://www.atsdr.cdc.gov/tfacts117.html (visited Sept. 3, 2002).

[38] The new SCRs were originally designed to be run using 360,000 gallons of anhydrous ammonia, which was to be stored in liquid form in large tanks at the plant. Residents were told that if a tank were to leak, "they would have 6 minutes to evacuate the town or else risk death." Harrison II, *supra* note 31. In the end, pursuant to lobbying from residents, the plant decided to use a safer, urea based, technology. *Id*.

[39] Harrison I, *supra* note 1. These details were confirmed by newspaper reports from other residents. "For decades, folks [in Cheshire] have looked out at the smokestacks from their vegetable gardens and their backyard swings, from the schoolyard, from the playground. The vapors smearing the sky have been as much a part of the local landscape as the Ohio River. And few have given it much thought." Simon, *supra* note 32.

blue haze hovering over the village, like exhaust from an alien spacecraft."[40]

AEP claimed that "at no time during the plant's operation did emissions in the plume exceed any health-based ambient air quality standards or permissible exposure limits established by federal or state regulations."[41] An AEP spokesman, Pat Hemlepp was quoted as denying that "'[t]here has been [any] . . . long term health impact, just a short term impact. Any attempt to sue on health grounds would have [sic] a slam dunk for us because all of the monitoring has shown it is not an issue.'"[42] And yet, a monitor installed by the EPA in Cheshire's town hall had to be recalibrated because on particularly bad days, SO_2 levels exceeded the machine's measurement capability.[43]

Whether or not emissions actually exceeded the regulatory limits,[44] the company did attempt to devise a technical solution to the problem. In a January 2002 press release, AEP suggested that it had developed a technique (involving the injection of water, magnesium hydroxide and calcium hydroxide into the plant's emissions) that would "produce the chemical changes required to reduce SO_3 levels."[45] These modifications were supposed to cost about $7 million (for only one of the two units at Gavin).[46] However, residents

[40] *Id*.

[41] Press release of Jan. 31, 2002, attributing remarks to John F. Norris Jr., AEP's senior vice president of operations and technical services. "The NAAQS [National Ambient Air Quality Standards] for sulfur oxides, measured as SO_2, are 0.14 parts per million (ppm), or 365 micrograms per cubic meter ($\mu g/m^3$), averaged over a period of 24 hours and not to be exceeded more than once per year, and an annual standard of 0.030 ppm, or 80 $\mu g/m^3$ never to be exceeded. The secondary standard for SO_2 is 0.50 ppm, or 1300 $\mu g/m^3$ averaged over a three-hour period. The secondary standard may not be exceeded more than once per year." 40 CFR Part 52, 67 FR 57155 (Monday, September 9, 2002).

[42] David Teather, *Smoke, Tears, Anger - Then Emptiness - in the Village Bought by a Power Company*, THE GUARDIAN, May 13 2002.

[43] Interview with Ron Hammond, Cheshire, Feb. 10, 2003 [hereinafter: Hammond interview]; Harrison II.

[44] Harrison suggested that "The standard is 5 particles (sic)/billion. At times, it has gone up to 300-700 particles(sic)/billion."

[45] Press release *id*.

[46] *Id*. The plan was to install the modifications at only one of the units to determine their efficacy and cost. The next unit would be equipped only after reviewing the results from the first. According to an EPA press release of May, 2002, "AEP, which is now using high sulfur coal, has . . . agreed to stockpile low sulfur coal before it starts operating its SCR. If the injections fail to control the sulfuric acid emissions, AEP will promptly switch to low sulfur coal or implement any other

expressed some doubt about the technological efficacy of this solution.[47]

In the mean time, many residents of Cheshire remained concerned about the health risks to which they had already been exposed, and worried about future exposure.[48] Complaints were filed with the EPA, and in 2000, the Agency accused the plant of violating the Clean Air Act, an accusation which AEP denies.[49] A subsequent investigation by the Agency for Toxic Substances and Disease Registry found the plant's emissions did "pose a public health hazard to some residents, particularly residents with asthma,"[50] but concluded that there were no documented long term health effects.

The precise history of the buyout negotiations is somewhat murky. In particular, it is difficult to identify the "Coasean moment" at which the deal was conceived. Initially, the residents' focus was litigation; it was for this purpose that they engaged a team of environmental lawyers.[51] According to one source, the buyout proposal emerged out of a series of emails from the residents to AEP, and was as much an expression of frustration as a serious offer.[52] Residents apparently expressed shock when their lawyers came back

equally effective short term measure." EPA, Ohio EPA Reach Agreement with AEP Gavin Plant, available at

http://www.epa.gov/Region5/news/news02/02opa062.htm (May 8, 2002).

[47] Ron Hammond pointed out to us that this solution had only been tried in European plants operating on a smaller scale and with a different scrubber technology. Gavin's significantly "wetter" process, according to Hammond, made it a poor candidate for this solution. Hammond Interview, *supra* note 43.

[48] In a newspaper interview, "Ron Hammond, a village resident, expressed concern about future health effects. 'I get out the door and I look at the plume, you know, to see what's happening. I want my daughters to get out and play in the summer. I check the SO_2 monitor to see if it's safe for them to play outside. And if it's not, you tell two little girls ages seven–and Emily almost 10–'It's a beautiful day outside, but you can't go out and play.'" Fred Kight, *Ohio Power Plant Buying out Homes in Cheshire*, Morning Edition (National Public Radio), June 24, 2002.

[49] "At this point, the company is not even in violation of E.P.A. rules." Katharine Q. Seelye, *Utility Buys Town It Choked, Lock, Stock and Blue Plume*, NY TIMES, May 13, 2002, at A1.

[50] Id.

[51] Hammond Interview, *supra* note 43. The team of lawyers was led by Richard Ayres, Barry Neuman, and Kathy Bailey, all of whom declined numerous invitations to speak to us.

[52] Hammond interview, *supra* note 43.

from meeting with AEP with a buyout proposal, although the buyout had been rumored for some time.[53]

AEP ultimately agreed to pay roughly $15 million for the town, and about $4.5 million to the residents' lawyers. According to the company, the deal was concluded to enable expansion of the plant's facilities, including a new dock and coal storage space. The company adamantly denied any liability for pollution and framed the deal only as a way of securing the need space.[54] Yet, the residents had to waive all future claims against AEP as part of the buyout. The company's position is that the terms of the settlement that barred residents from suing the company for damage to past or future health were "just the lawyers doing their jobs,"[55] and played no role in the negotiations.

The exact formula for computing compensation has not been disclosed, and residents and their attorneys will not discuss the specifics. We know at least the following:

> a) Payment was to be made for properties based on 1999 tax assessments. Sellers were to receive a minimum of $100,000 per property, with prices ranging from 2-3.5× the 1999 assessed value.[56] It appears that no properties in Cheshire had been sold during the two or three years preceding the buyout, in large part because no one wished

[53] Harrison II, *supra* note 30. Hammond, *id.* It is noteworthy that all parties involved had a stake in keeping the exact details of the negotiation process murky. Furthermore, all maintained that the initial proposal came from the residents. We discuss the significance of this detail in Part VI, *infra*.

[54] According to one reporter, "[s]ince the closing of a nearby coal mine in Meigs County that had supplied Gavin with six million tons each year, the coal-burning plant has increased its river traffic by some 3,500 barges a year, company officials say. Meigs coal arrived by land; its replacement comes by river." Rita Price, *Watery Highway; The Ohio River Holds Tight the Hearts of Those Who Work, Live Along its Banks*, COLUMBUS DISPATCH, September 1, 2002 at B1.

The company may have had many reasons to describe the buyout as a plan to allow expansion of the plant, rather than to reduce its pollution liability. A site-specific expansion rationale limits the precedential value of the sale and reduces the likelihood that communities located near other AEP plants could seek similar treatment. Moreover, the expansion rationale offered a reason for the company's unwillingness to buy properties just outside the town limits, where the health risk was presumably no less than to those inside town itself.

[55] Teather, *supra* note 42.

[56] Mary Beth Lane, *Cheshire Land Buyout; Village Holdouts May Derail Agreement*, COLUMBUS DISPATCH, September 14, 2002 at A1.

> to move into the town, given the uncertainty about the pollution and attendant health risks.[57]
>
> b) AEP did not insist that everyone sell; the deal did apparently contain a requirement that more than half of the residents would tender their land before it would become binding on the buyer.
>
> c) Residents who wished to remain in their homes could sell and receive a life estate. This arrangement was apparently conditioned on not staying away from Cheshire for longer than 119 days in any year, which would result in forfeiture of the life estate.[58]
>
> d) Purchases were contingent on residents signing a waiver for any past health damage caused by exposure to emissions from the plant, either from the blue plume or previously.

Ultimately, all but two resident and four non-resident property owners agreed to sell. In addition, roughly 10-12 elderly residents sold, but elected to remain in their homes for the duration of their lives. The two resident owners who chose to stay were long-term Cheshirites who apparently placed very high values on their land or houses.[59] Most of those who did sell purchased new homes in the general area,[60] although unlike some other towns that have been dissolved, the residents of Cheshire did not agree to move en masse to a new location.[61] Finally, despite the buyout, the residents voted overwhelmingly not to dissolve the town government, so technically

[57] Harrison I, *supra* note 1. She noted that the housing market was "abysmal." Houses have been on the market for two or three years and couldn't sell. In the past (pre-1995) there was a normal market.

[58] Harrison II, *supra* note 31. Given that most residents who opted for this arrangement are elderly and might need extended medical care, the requirement of continued presence could have far reaching effect on the lives of the life estate tenants.

[59] We discuss those cases in Part VI, *infra*.

[60] According to one reporter, "several families plan to remain within breathing distance of the plant's emissions when they move out of Cheshire." Simon, s*upra* note 32 at 1. Few residents moved more than 20 miles away. Harrison II, *supra* note 31.

[61] The case of Valmeyer Il, which relocated on higher ground to avoid flooding from the Mississippi, is one example. See Wilkerson, *supra* note 17.

Cheshire still exists, and will be governed by its roughly 15 remaining residents.[62]

The Cheshire buyout presents several anomalies for conventional economic theorizing about torts involving multiple victims. First, and foremost, the Cheshire buyout was simply not supposed to happen. The deal involved over 90 sellers and a single buyer, a setting that according to theoretic predictions should have been rife with holdouts. Yet, the deal went forward relatively smoothly, without any apparent holdouts (in the economic sense of the term).[63]

Second, the sell-off raises important questions of economic efficiency. It is usually presumed that voluntary transactions benefit all parties involved. Yet the case of Cheshire raises a serious possibility that at least some sellers may have been spurred to tender their property only because they feared it would fall to zero in value unless they sold immediately. In other words, though seemingly voluntary, at least some of the sales likely involved a coercive element, which casts a doubt on the efficiency of the deal.

Finally, the theory suggests that the residents' effort to lobby for and negotiate a deal with AEP would be undermined by a free-rider or collective action problem. This did not happen in Cheshire.

The remainder of the paper is dedicated to theoretic discussion of these and other challenges raised by Cheshire's story. We commence with a review of the economic analysis of pollution disputes, as it has evolved to date.

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[62] Cheshire is funded by the State of Ohio on a five-year basis, and its revenues are guaranteed for another four years. Harrison II, *supra* note 31 and Hammond Interview, *supra* note 43. Hence, the village can continue to operate at for least that long even with a diminished tax base. There are additional administrative constraints, however: State law requires that the village have at least six elected councilors and an elected mayor, four of whom must be present to conduct business. An appointed financial officer may replace the town clerk. Harrison II, *supra* note 31.

[63] We discuss the difference between the economic definition of the term and the colloquial use thereof in Part VI, *infra*. Of course, it is impossible to rule out the possibility that the resident owners who remained will decide, at the end, to sell to AEP at a premium over the collective deal.

II. THE ECONOMIC THEORY OF NUISANCE LAW

The problem of pollution has long posed a challenge to economic theorists and policy makers. The reason is simple—pollution is a classic example of an externality or market failure because the benefits of the pollution-producing activity go solely to the polluter, while the costs of the pollution are distributed to its victims, or to society at large. Hence, rational self-interested polluters will under-invest in abatement efforts. At least at first glance, it appears that a laissez faire world will therefore have an inefficiently high level of pollution; society will be forced to endure pollution whose harms exceed its abatement costs.

A simple numeric example helps illustrate why this result obtains. Suppose the polluter could install a scrubber that would completely eliminate all pollution. The cost of the scrubber is $10, while the cost of the pollution to its victims is $100. Even though society as a whole would realize a net gain of $90 from installing the scrubber, the polluter would gain only a negligible individual benefit from doing so, and would need to incur the full $10 cost. Consequently, the scrubber will not be installed, even though it would be welfare-enhancing to do so: the pollution is therefore inefficient.

The first economist to address the challenge of misaligned incentives posed by pollution was Pigou. His solution to the externality created by pollution was to make the polluter pay the full social cost of her actions by imposing a tax on emissions. If the factory emitted 100 tons of pollution, with a social harm of $1 per ton, then a tax of $1 per ton would force the polluter to "internalize" the true social costs of its behavior. With the tax in place, a $10 in investment in a scrubber now looks like a good deal to the polluter—instead of saving society $100 in pollution damages, the scrubber saves the polluter *itself* $100 in pollution tax liability, for a net savings of $90.[64] Essentially, Pigou understood pollution as a public problem necessitating a regulatory solution.

[64] While the tax "solves" the externality problem in a technical sense, it does so only by finessing some difficult implementation issues. First, the government needs to be able to monitor the amount of smoke the polluter emits, so that the tax "base" can be properly defined. A second challenge is even more difficult, and has been the source of considerable academic skepticism. To send the correct signal to the polluter, the government must be able to set the correct tax rate. This requires complete information about the social harms created by a ton of emissions. Victims of pollution are heterogeneous in terms of their sensitivity to its effects. Some

Pigou's characterization of pollution was challenged in Ronald Coase's classic article, *The Problem of Social Cost.* Coase made two important contributions to the analysis of the pollution question. First, he realized that nuisance law, with appropriate damages, could serve the same function as a Pigovian tax on pollution. Instead of the government implementing a tax at the appropriate rate, the nuisance law solution requires that a court make the polluter pay the full cost of his pollution as damages to the victim-plaintiffs who sue her in nuisance. In this way, the polluter once again is made to internalize the full harm she causes, and will thus clean up pollution as long as it is cheaper to do so than to pay nuisance damages.[65]

Coase's second major insight was to reconceive of pollution as a private bargaining problem, rather than an issue for public regulation. Suppose that pollution is cheap to clean up and costly to its victims, but that for some reason the pollution is not deemed a nuisance. Even though the polluter is under no legal obligation to cease polluting, Coase realized that when bargaining is easy, the parties will have an incentive to strike a deal under which the pollution is eliminated in exchange for a payment to the polluter by the victims.[66] If the pollution is held to be a nuisance, the payment of damages (or the granting of an injunction to the victims) will also cause the pollution to cease.[67]

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victims can presumably mitigate the harms to themselves at relatively low cost—by installing an air filter or painting their houses more often. Others face more-serious health consequences that are almost impossible to mitigate except by moving beyond the pollution's reach. Hence, valuing the social harms of pollution is extremely difficult. Moreover, the costs of pollution are likely to vary with the amount of emissions. The effect of the first ton of pollution may be higher or lower than the 100th ton, and the appropriate pollution tax requires that we price each ton at its marginal cost. In short, Pigou's solution, while technically appealing, places a severe informational burden on the regulatory apparatus—a burden most economists have concluded is very difficult for regulators to carry.

[65] Again, however, the informational requirements involved in this "solution" are not to be slighted: courts must be able to determine the pollutee's damages correctly, and of course all victims' costs must be considered, even if not all decide to litigate against the offending polluter.

[66] The assumed inefficiency of the pollution guarantees that there is a price—less than the victim's harm from the pollution and more than the costs of cleaning it up—at which a mutually-beneficial cleanup deal can be struck. In the above scenario, even if the polluter had the legal right to continue polluting, the victim(s) could offer the polluter some amount between $10 (the scrubber cost) and $100 (the pollution cost) to install the scrubber. The elimination of pollution for any payment in this range would leave both parties better off than before the deal.

[67] The efficiency also obtains when the costs of cleanup are $100 and the benefits are only $10, so it is now efficient to continue polluting rather than clean up. Even if

Although Coase dispensed with the difficult valuation problems inherent in the Pigouvian approach, he was able to do so only by substituting an equally intransigent problem—that of transaction costs. Transaction costs are notoriously difficult to define, but for our purposes, we can think of them as anything that impedes private bargaining between two or more parties. This might include the costs of determining those with whom one needs to negotiate,[68] the costs of reaching an agreement,[69] and costs imposed by strategic behavior as each side haggles for the most favorable outcome.[70] As Coase was the first to admit, in a world of high transaction costs, parties will not be able to bargain for the efficient level of pollution because the costs of reaching a deal swallow-up any gains from the deal itself. In such setting, some other kind of solution to the pollution problem must be found.

Coase's main insight was negative: in a world without transaction costs, both regulation and legal liability would be redundant. He offered little guidance on either the role or the design of legal rules when the cost of transacting is positive. This task fell to Calabresi and Melamed,[71] who extended the Coasean insight by exploring the role of legal institutions in a world with positive transaction costs. They observed that the law performs two different functions: allocating entitlements to resources and determining how they are to be protected. In addressing the question of protection, Calabresi and Melamed focused on the choice between injunctive relief and damages—labeling the former a "property rule" and the latter a "liability rule." In the pollution context, for example, society

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the victims are granted an injunction closing down the plant, the polluter will offer them something between $10 and $100 to allow the pollution to continue, and both parties will be better off.

A further advantage of private bargaining is that it eliminates the need for courts or regulators to value either the harms to victims or the cost of cleaning up the pollution. Victims can arguably assess for themselves how much they would be willing to pay to eliminate or reduce pollution, and the polluter can assess how much it will cost to eliminate the emissions in question. Hence , both parties can strike a deal on their own when it is in their interests to do so.

[68] *See generally,* Oliver E. Williamson, THE ECONOMIC INSTITUTIONS OF CAPITALISM 20-22 (1985).

[69] *Id.*

[70] *See* Robert Cooter, *The Cost of Coase*, 11 J. LEGAL STUD. 1, 23 (1982) (observing that strategic bargaining may thwart efficient allocation of resources).

[71] *See* Calabresi & Melamed, *supra* note 10

can grant the polluter the entitlement to pollute, or conversely, vest in residents the right to live pollution-free. After deciding who owns the legal entitlement, society must then choose whether to sanction violations of that entitlement with an injunction or an award of damages. Drawing on Coase, Calabresi and Melamed proposed that injunctive relief should be favored when transaction costs are low, and damages should be preferred when transaction costs are high. Their rationale was that when the cost of transacting is sufficiently low, the party subject to the injunction would be able to buy the entitlement from its holder if she values the entitlement more highly.[72] When transaction costs are high, on the other hand, optimal allocation through bargaining is not possible, and damages should be used as a proxy for the value the holder places on the entitlement.[73]

In the post-Coasean world, then, the crucial question for legal policy becomes—what determines the size of transaction costs? While this is a difficult question in general, the consensus view in law and economics is clear on at least one issue: transaction costs should increase as the number of parties in the negotiations increase. Cooter and Ulen's textbook, for example, lists large numbers as a factor promoting high transaction costs.[74] Polinsky arrived at a similar conclusion in his article on the economics of nuisance law, suggesting that when the number of victims is large, bargaining between polluter and victims is essentially impossible.[75] Hoffman and Spitzer make the same claim: more parties increase the size of transaction costs.[76]

Large numbers are said to generate high transaction costs, for two reasons. First, the presence of many parties makes coordination difficult. Consider a polluter who wishes to buy permission to pollute from all those affected by her factory's smoke. To start with, the more

[72] Such bargains guarantee efficiency, for reasons outlined earlier.

[73] As long as victims' harms are higher than the polluter's cleanup costs (i.e., the pollution is inefficient), efficiency is guaranteed by damages which are set at any amount greater than the cleanup costs. Such damages make it cheaper for the polluter to clean up rather than pollute and pay damages.

[74] *See e.g.,* Robert Cooter and Thomas Ulen, LAW AND ECONOMICS 86, table 4.3 (2d ed. 1997).

[75] Hence, neither private damages nor injunctions are effective remedies when there are multiple victims. Instead public enforcement (regulation) should be preferred. Class action litigation is another possible alternative. *See,* A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075, 1109 (1980).

[76] Elizabeth Hoffman and Matthew L. Spitzer, *Experimental Tests of the Coase Theorem with Large Bargaining Groups,* 15 J. LEGAL STUDIES 149, 150 (1986).

victims there are, the harder it is to locate them all and screen out the actual victims from those who are not affected. Once the victims are identified, there remains the process of negotiating deals with numerous victims, or of creating a single representative for the victim class as a whole. Finally, larger numbers of victims might increase the heterogeneity within the victim class, which makes negotiating agreements more problematic.

A second obstacle alluded to earlier is the holdout problem. It is commonly asserted that holdouts are more likely as the number of parties increases, although the rationale for this view is not entirely clear. So for example, Calabresi and Melamed suggest that where "we enjoin Taney and there are 10,000 injured Marshalls," there will likely be hold-outs whose presence would make it impossible for all the Marshalls to agree to allow let Taney continue his nuisance, even though it would be efficient to do so.[77] Hoffman and Spitzer agree, suggesting that "[a]s a theoretical matter, there is reason to believe that the parties will likely fail to exhaust the gains from voluntary trade as the number of parties increases, because the problem with holdouts becomes more acute."[78]

The conventional wisdom about how to deal with nuisance problems is summarized in the first row of Table 1, below. When there are few parties, theory suggests that transaction costs should be low, and hence that private bargaining between the polluter and his victims is feasible. In these circumstances, efficiency can be secured by assigning the right to pollute (or to be free of pollution) to one or

[77] Calabresi & Melamed, *supra* note 10, at 1119.

[78] Hoffman and Spitzer, *supra* note 76, at 150. Their proof of this assertion assumes that the population at large consists of a large number of individuals, of whom g percent are greedy and 1-g percent are "reasonable." (Greedy persons always holdout, while reasonable ones always accept a "fair" bargain.) It is then obvious that the probability that at least one greedy person will be found in a random sample of size N increases as the sample size gets larger. Hence, holdouts are shown to be more frequent in larger groups. Of course, their "explanation" for this result boils down to nothing more than an exogenous assumption about players' strategies, which are fixed ex ante. In essence, they simply assumed the result they were trying to prove.

In fact, however, the holdout problem is really no different from the bilateral monopoly problem that occurs when a single seller faces a single buyer. As Robert Cooter pointed out long ago, theory and common sense both predict that parties will bluff, exaggerate, stall, hold-out, and take other strategic measures to achieve a greater share of the surplus that is available from a successful bargain. Such measures are properly thought of as a kind of transaction cost, and there is no reason to think they are more likely as the number of parties increases. *See* Cooter, *supra* note , 70, at 23.

the other side via a property rule, and letting trade take place. When there are many parties, theory predicts that transaction costs should be high, so bargaining between the parties is likely to be infeasible. Hence, courts should force polluters to internalize the costs of pollution by setting appropriate damages.

Table 1: Optimal Legal Rules and Number of Parties		
	Few Parties	Many Parties
Theory	Property Rule/Injunction: Enhance Private Bargaining	Liability Rule/Damages: Private Bargaining Precluded by High Trans. Costs
Practice	No Bargaining After Injunctions: Enmity (Farnsworth) or Bilateral Monopoly	No Holdouts: Cheshire[79]

Empirical studies fail to bear out the prediction that bargaining should be expected when the number of parties is small, however. For example, Ward Farnsworth investigated 20 nuisance suits to learn if the parties bargained over the outcomes after a final disposition by the judge. The cases were selected with an eye towards meeting the requirements for low transaction costs—small number of parties, only a single issue, and so on. The result he reported was completely at odds with the outcome he expected based on the theory:

> [N]one of the parties in the twenty cases made trades after judgment. They generally did not negotiate at all after judgment. Nor did the lawyers in these cases think there would have been bargaining if the litigation had ended with a judgment in the opposite direction.[80]

[79] The experimental evidence from Hoffman and Spitzer also suggests that holdouts are unlikely to arise in negotiations with as many as 19 sellers. Hoffman and Spitzer, *supra* note 76.

[80] Ward Farnsworth, *Do Parties to Nuisance Cases Bargain After Judgment? A Glimpse Inside the Cathedral*, 66 U. CHI. L. REV. 373, 384 (1999). Farnsworth suggests that enmity or acrimony between the litigants constituted the major barrier to post-litigation negotiations between them. *Id.* A second reason for the lack of negotiations was that parties did not see their claims as translatable into cash. *Id*.

Thus, after Farnsworth's study, only one tenet of the theory remained largely unshaken: the prediction that liability rules should be employed in multi-party disputes. Indeed, Farnsworth results indirectly lent additional credence to this prediction. For if parties do not bargain even when transaction costs are low, a fortiori, there is no reason to expect successful bargaining when transaction costs are high. The only study that seemed to point in the opposite direction was a behavioral experiment conducted by Hoffman and Spitzer, in which they found—at least under laboratory conditions—that buyers were able to negotiate deals with up to 19 sellers, without encountering serious holdout problems.[81] Yet, no real world study has ever substantiated their finding. On the contrary, several books were written on the prevalence of holdouts, suggesting that the holdout problem is both serious and real.[82]

We posit that the disparity between theory and practice stems, in part, from theorists' failure to appreciate the overriding effects of communities. Economic models postulate one or more atomistic individual pollution victims, making decisions independently of one another. In developing the theory of nuisance disputes, theorists have begun with a single polluter and a single victim, and then, holding everything else (but transaction costs) equal, increased the number of victims.[83] But this approach misses the essential jointness of decision-making in environments characterized by strong inter-personal ties. We discuss the effect of this factor on standard theorizing in Part IV, *infra.* Prior to that, however, we need to dispense with an obvious individual-based explanation for why there were no holdouts in Cheshire. Perhaps all the residents separately agreed to sell simply because they each individually realized that they had no legal remedy in their dispute with AEP. To rebut this possibility, we show that Ohio law offered residents a legal remedy that afforded them the possibility to holdout by pursuing an injunction in a nuisance suit against AEP.

III. BACKGROUND LEGAL RULES AND THEIR IMPLICATIONS

[81] Hoffman & Spitzer, *supra* note 76.

[82] *See e.g.,* Andrew Alpern & Seymour Durst, HOLDOUTS! (1984); NEW YORK'S ARCHITECTURAL HOLDOUTS (1984)

[83] *See e.g.,* Polinsky, *supra* note 75.

How can the Cheshire buyout be explained? Why did not even one of Cheshire's residents bring a nuisance suit against AEP? In this part, we seek to elucidate the interplay of legal and social factors that accounts for the residents' decision to sell. We begin by laying out the legal background against which the developments unfolded.

The Cheshire pollution case was governed by Ohio law. What makes Ohio law fascinating is that it is a perfect example of the model used both by law and economics scholars and law professors.[84] Ohio's law recognizes causes of action for both private[85] and public nuisance.[86] Moreover, it permits pollution victims to bring a nuisance suit against regulated polluters.[87] Finally, and most importantly, it provides for both damages[88] and injunctive relief.[89] Ohio law is, thus, similar in all relevant respects to the law in many other states that elected not to follow New York in denying injunctive relief to pollution victims.[90]

In the first part of the analysis, we apply standard law and economics analysis to the facts of Cheshire in order to delineate the legal relationship between the residents and the polluter. The law provides a natural starting point for our analysis since it determines the rights and duties of the parties involved, and their bargaining position vis-à-vis one another. Then, in the second part, we broaden the prism of the discussion by incorporating various non-legal factors that shaped the behavior of the parties. As will become clear, none of those factors are particular to Cheshire; they have universal applicability in all pollution disputes. The incorporation of these factors should lead the theorist to considerably different results than those predicted by law and economics models. The empirical approach we utilize reveals that the role of law is much more limited

[84] *See e.g.,* Jesse Dukeminier & James E. Krier, Property 747-76 (5th Ed. 2002) (discussing nuisance law); John P. Dwyer & Peter S. Menell, PROPERTY LAW AND POLICY: A COMPARATIVE INSTITUTIONAL PERSPECTIVE 296-317 (1998) (same).

[85] *See* text accompanying notes 100-103, *infra*.

[86] *See* text accompanying notes 110-114, *infra.*

[87] *See* text accompanying notes 104-107, *infra.*

[88] *See* text accompanying notes 115-116, *infra.*

[89] *See* text accompanying notes 117-121, *infra.*

[90] *Cf.* Bell & Parchomovsky, *Pliability Rules, supra* note 15 (discussing the effect of *Boomer* on the legal entitlement of the residents).

than is commonly assumed, and that to the extent that law is relevant, it is for reasons not discussed by standard theorizing.

A. Nuisance Law

Nuisance law constitutes an important intersection between property and torts. Despite its long history,[91] or perhaps because of it, nuisance law has evolved into a "legal grab-bag that the courts seized upon as a substitute for analysis whenever they wished to redress an injury."[92] This judicial proclivity has made nuisance a top contender for the "most-impenetrable-jungle-in-the-entire-law" award.[93] Nuisance law encompasses two distinct causes of action, which share very little other than their name.[94] The first, private nuisance springs from unreasonable interference with use and enjoyment of land. The second, public nuisance, arises from an invasion of a public right,[95] for example, the obstruction of a public road.[96]

Historically, both private and public nuisance were common law doctrines developed by the courts. Through time, many state legislators codified the law of nuisance.[97] Some state laws preempted the common law framework; others' remained largely faithful to it.[98] Ohio's law probably falls within the latter category. It also exemplifies the famous caveat about the inscrutability of nuisance law.[99]

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[91] For an excellent historic review, see Jeff L. Lewin, *Boomer and American Law of Nuisance: Past, Present and Future*, 54 ALB. L. REV. 189, 192-196 (1990) (tracing the origin of private nuisance law back to the 12th century).

[92] *Id.,* at 192. Accord, William L. Prosser, *Insurance Without Fault*, 20 TEX. L. REV. 399, 410 (1942) (dubbing nuisance a "legal garbage can"); W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 549-50 (5th ed., 1984) ("It has meant all things to all people, and has been applied indiscriminately to everything from an alarming advertisement to a cockroach baked in a pie." (footnotes omitted)).

[93] PAGE KEETON ET AL., *id.* at § 86, at 618 ("There is perhaps no more impenetrable jungle in the entire law than that which surrounds the word 'nuisance.'").

[94] *Id,* at § 86, 616.

[95] *Id.*

[96] *See e.g.,* Lewin, *supra* note 91, at 195.

[97] *See* Andrew Jackson Heimert*, Keeping Pigs out of Parlors: Using Nuisance Law to Affect the Allocation of Pollution*, 27 ENVIRONMENTAL LAW 403 (1997) (reviewing in Appendix nuisance laws in all states).

[98] *See* text accompanying notes 100-114, *infra.*

[99] See PAGE KEETON ET AL., *supra* note 92, at § 86 at 618.

1. Cause of Action

Ohio law provides causes of action for both private and public nuisance.[100] Private nuisance arises from "the invasion of the private interest in the use and enjoyment of land." [101] To prevail in a private nuisance "it is not necessary that [the residents] should be driven from their dwellings,… it is enough that [the residents'] enjoyment of life and property is rendered uncomfortable, for in some circumstances discomfort and annoyance may constitute a nuisance."[102] Of particular relevance to our case is Ohio's recognition of qualified nuisances that consist of "anything lawfully but so negligently or carelessly done or

[100] It is noteworthy that since AEP has been operating in Cheshire for about three decades, AEP if sued, could raise statute of limitations defense. With respect to public nuisance, the general rule in Ohio is that "no length of time can legalize a public nuisance." *Little Miami R.R. Co. v. Commissioners of Greene Cty*, 31 Ohio St. 338, 341 (1877). *Accord*, *Columbus Corp. v. Cuyahoga Cty*, 589 N.E.2d 467, 470 (Ohio Ct. App. 1990). As for private nuisance, the statute of limitations in Ohio is four years. *See* Ohio Revised Code (R.C.) 2305.09 subsection (D).

Importantly, Ohio law divides private nuisance claims into two types, "permanent" and "continuing." In *Olpp v. Hocking Valley R.R. Co*., 31 Ohio Dec. 453 (Ct. Com. Pls. 1920), the Court of Common Pleas defined permanent nuisance as "one which continues indefinitely without change of character," and continuing nuisance as "abatable by skill and labor." For permanent nuisances, the statute of limitations begins to run "at the time that the nuisance begins or is first noticed, provided that the permanent nature of the nuisance can be ascertained at that time." *Brown v. Cty Commrs of Scioto Cty*, 622 N.E.2d 1153, 1162 (Ohio Ct. App. 1993) (citing Annotation, When Statute of Limitations Begins to Run as to Cause of Action for Nuisance Based on Air Pollution (1983), 19 A.L.R.4th 456, 459-60, Section 2[a]). For continuing nuisance, an action "can be brought for damages for those injuries incurred within the [limitations period], regardless of when the nuisance began." *Brown*, *id*. We believe that the air pollution produced by AEP should be classified as continuing nuisance. First, the character of the emissions changed in 2001 after the installation of the SCRs, which caused the appearance of the blue plume. Second, there is ample evidence that AEP could take measures to abate the nuisance. Hence, the residents' potential suits for both a public and a private nuisance would not barred by a statute of limitations defense.

[101] See, Brown, 622 N.E.2d at 1158 (citing Prosser & Keeton, The Law of Torts 616 § 86 (5th ed. 1984)). In *Rautsaw v. Clark*, 488 N.E.2d 243, the Ohio court of appeals further elucidated that the law of private nuisance "generally turns on the factual question[s] whether the use to which property is put is a reasonable use under the circumstances, and whether there is an appreciable, substantial, tangible injury resulting in actual, material, [and] physical discomfort." Id. at 245 (Ohio Ct. App. 1985) (citations omitted) (quoting *Antonik v. Chamberlain*, 78 N.E.2d 752 (Ohio Ct. App. 1947)).

[102] See, *Brown*, 622 N.E.2d at 1158 (citing 61 American Jurisprudence *716 2d (1981) 950, Pollution Control, Section 531).

permitted as to create a potential and unreasonable risk of harm which, in due course, results in injury to another."[103]

Importantly, the fact that AEP's activities are regulated does not shelter the company from a qualified nuisance claim.[104] An action for a qualified private nuisance "is essentially an action in tort for the negligent maintenance of a condition, which, of itself, creates an unreasonable risk of harm, ultimately resulting in injury."[105] In *Blankenship v. S.H. Bell*,[106] a case involving very similar facts to Cheshire's, the court found a polluter liable even though "[it] was not formally found to have violated its permits."[107]

Our analysis of the law suggests that the Cheshire residents had a strong prima facie case against AEP for maintenance of a qualified nuisance. We are not alone in reaching this conclusion: the lawyers representing the residents also believed that they had a strong case, at least with respect to certain individuals.[108] In January 2002, the Agency for Toxic Substances and Disease Registry, reported that the levels of sulfur dioxide and sulfuric acid in Cheshire "pose a public health hazard to some residents, particularly residents with asthma," and produces "adverse effects on the lungs."[109] Furthermore, the blue plume emanating from AEP's plant had immediate adverse effect on the physical well-being of the residents. The emissions caused terrible

[103] *Metzger*, 66 N.E.2d at 205, quoting *Taylor v. Cincinnati*, 55 N.E.2d 724, 732 (Ohio 1944). See also *State ex rel. Schoener v. Bd. of County Commrs*., 619 N.E.2d 2, (Ohio Ct. App. 1992) ("Strict liability is imposed when an absolute nuisance is found to exist, but negligence must be proved to establish a qualified nuisance"); *Door Co. v. Cleveland*, 74 N.E.2d 239, 1226 (Ohio 1947) ("As distinguished from a qualified nuisance involving negligence, . . . absolute liability attaches notwithstanding the absence of fault").

[103] *Metzger*, 66 N.E.2d at 205, quoting *Taylor v. Cincinnati*, 55 N.E.2d 724, 732 (Ohio 1944). See also *State ex rel. Schoener v. Bd. of County Commrs.*, 619 N.E.2d 2, (Ohio Ct. App. 1992) ("Strict liability is imposed when an absolute nuisance is found to exist, but negligence must be proved to establish a qualified nuisance").

[104] *Id*. at 1160.

[105] *Brown*, *id*. at 1160; *Allen Freight Lines, Inc. v. Consol. Rail Corp*. (1992), 64 Ohio St.3d 274, 275, 595 N.E.2d 855, 856. In *Rothfuss v. Hamilton Masonic Temple*, the Ohio Supreme Court held that "[i]n an action based on the maintenance of a qualified nuisance, the standard of care owed to one injured is that care a prudent man would exercise in preventing potentially or unreasonably dangerous conditions to exist." 34 Ohio St. 2d 176, 180, 297 N.E.2d 105 (1973).

[106] Nos. 98-CO-9, 98-CO-14, 1999 Ohio App. LEXIS 6418.

[107] Id. at *8.

[108] Hammond Interview, *supra* note 43.

[109] Quoted in Seelye, *supra* note 49.

headaches and eye soreness. In certain cases, it caused the emergence of sores and aggravated preexisting medical conditions. It has also instilled fear of future injuries in the minds of many Cheshire residents. Most importantly, perhaps, AEP has admitted that it could abate the emissions of sulfur trioxide. Indeed, AEP repeatedly stated that it would take measures to do so. Given the environmental impact, the health effects and the existence of cost-effective abatement measures, it appears that the residents had a fair chance at prevailing in a private nuisance suit against AEP.

The residents' case in an action for a public nuisance seems equally strong,[110] perhaps even stronger. Ohio Administrative Code § 3745-15-07 prohibits the emission or escape into the open air… of smoke, ashes, dust, dirt, grime, acids, fumes, gases, vapors, odors, or any other substances or combinations of substances, in such manner or in such amounts as to endanger the health, safety or welfare of the public, or cause unreasonable injury or damage to property."[111]

To bring a private action for a public nuisance, an individual resident or the Village of Cheshire as a whole had to demonstrate a particular harm "different in kind than that suffered by the public in general."[112] In *Brown v. County Commrs of Scioto County*, the Ohio Supreme Court, specifically stated that where a party "lost an opportunity to sell her property and was unable to use and enjoy it, [her harm is] sufficiently distinct or particular… so as to allow recover under a statutory nuisance theory."[113] It is probable that under

[110] It bears emphasis that the weight of the authority suggests an action for a public nuisance--like an action for a private one--requires a showing of either an absolute nuisance or a qualified nuisance. Thus, our analysis of qualified nuisance is equally applicable here.

However, recently in *Hager v. Waste Technologies Industries*, 2002 WL 1483913, 2002-Ohio-3466, the Ohio Court of Appeals stated that:

[b]y enacting [§ 3745-15-07], Ohio declared that the proscribed conduct therein constituted an unreasonable interference with a public right . . . to remain free from exposure to polluting substances that in such a manner or amount endanger the health, safety or welfare of the public, or which causes unreasonable injury to property—is found to be a public nuisance.

Id., at *12.

[111] It is also noteworthy that § 3704.05(A) of the Ohio Revised Code states that "[n]o person shall cause, permit, or allow emission of an air contaminant in violation of any rule adopted by the director of environmental protection."

[112] *Brown*, 622 N.E.2d 1153, 1160 (Ohio Ct. App. 1993).

[113] 622 N.E.2d 1153, 1160.

this standard, the residents of Cheshire had standing to bring a private action for a public nuisance against AEP.[114]

2. Remedies

But what remedy could the Cheshire residents obtain if they prevailed? Specifically, could the residents secure an injunction against AEP? In an action for either private or public nuisance, a plaintiff may seek damages or injunctive relief. As a rule, the standard remedy in an action for a private nuisance is monetary damages; an injunction would be granted only if damages cannot adequately redress injury.[115] If a claim for damages is sustained "the measure of damages is not the decrease in value of the fee but the impaired value of the use of the premises."[116]

Equitable relief would only be awarded if the injury is irreparable.[117] Thus, if a nuisance only causes a property damages,

[114] It should be noted that in *Hager*, 2002 WL 1483913, 2002-Ohio-3466, the Ohio court of appeals refused to overrule a summary judgment denying relief to neighboring property owners who brought an action for statutory public nuisance against a hazardous waste incineration facility. Critical to the court's decision was the finding that the property owners "produced no evidence, other than mere allegations, that any of the alleged pollutants or emissions endangered the health, safety, or welfare of the public." Id. at *14. Furthermore, the defendant adduced two expert testimonies attesting that "the alleged airborne pollutants and odors emanating from WTI were minimal or nonexistent. Id. at *16. In Cheshire, by contrast, it is quite clear that the emissions posed a danger to the health of the residents.

[115] See e.g., *Adams v. Gorrell*, 161 N.E. 786, 787 (Ohio Ct. App. 1927) aff'd 162 N.E. 397 (Ohio 1928) ("[i]f one so uses his property as to injure the rights of another, he is liable in damages to the person so wronged, and, if the damages are not adequate, and the injuries cannot be fully compensated in money, a court of equity will intervene by way of injunction and grant appropriate relief.").

[116] *Frey v. Queen City Paper,* 66 N.E.2d 252, 255 (Ohio Ct. App. 1946) (emphasis added). One measure of the "impaired value of the premises" is the depreciation in rental value or the cost of repairs. Id.

[117] Irreparable harm is an injury for which no plain, adequate, and complete remedy exists in law. *See Harden Chevrolet Co. v. Pickaway Grain*, 194 N.E.2d 177 (Ohio Ct. Com. Pls. 1961); also *Olpp v. Hocking Valley Railroad Co*., 31 Ohio Dec. 453 (Ohio Ct. Com. Pls. 1920) ("By the term irreparable injury it is not meant that there must not be any physical injury or possibility of repairing the injury. All that is meant is that the injury would be a grievous one, at least a material one, and not adequately reparable in damages").

Douglas Laycock has argued that despite this kind of rhetoric, plaintiffs can often secure an injunction without proving an "irreparable injury," because courts have watered down the meaning of that phrase. "A wide ranges of wrongs relating to land are regularly held to inflict irreparable injury: These include . . . nuisance [and many other wrongs]. . . Courts offer a variety of explanations for why the injury is irreparable in these cases[, . . . but] [w]hatever the rationale, injunctive relief is

injunctive relief is unlikely. When a nuisance also affects health and comfort, however, the analysis changes, and courts will be more willing to enjoin the harmful activity. [118] Actual personal injury is not a necessary prerequisite for an injunction. Substantial annoyance or physical discomfort that do not amount to an actual injury may also warrant injunctive relief.[119] Furthermore, in the case of "continuing" nuisances, Ohio law tends to allow plaintiffs to proceed in equity in order to relieve them from the need to bring a new suit for damages every several years.

Furthermore, the residents could have involved the EPA in their legal battle against the plant. In this regard, it should be remembered that the EPA was already closely following the problem, and pressure from the residents could have resulted in administrative action against the plant.[120] Additionally, the residents could try to persuade the Attorney General to bring a lawsuit for a statutory public nuisance against AEP,[121] and thereby substantially increase the likelihood of receiving injunctive relief.

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almost never withheld on the ground that damages are an adequate remedy. [However,] it is sometimes withheld on other grounds, especially the disproportionate expense of removing an encroachment or abating nuisance." Laycock, *supra* note 20, at 38 (footnotes omitted).

[118] For example, in *McClung v. North Bend Coal,* Ohio Cir. Dec. 243, 261 (Ohio Cir. Ct. 1895), the court granted the plaintiff injunctive relief, finding that the plaintiff's health has been seriously and injuriously affected by smoke and noxious gases emitted by the defendant's coal operations. 6 Ohio Cir. Dec. 243, 261 (Ohio Cir. Ct. 1895)

[119] *Dale v. Bryant*, 141 N.E.2d 504, 507 (Ohio Ct. Com. Pls. 1947) (citing *Eller v. Koehler*, 67 N.E. 89 (Ohio 1903)).

[120] After the purchase was negotiated, Ohio regulators levied a $40,000 fine against AEP "for allowing burned-coal waste, called fly ash, repeatedly to escape from the Gavin plant. Separately last month, federal regulators found the company violated the Clean Air Act by allowing high levels of tiny particles to repeatedly blow from the plant." Mary Beth Lane*, Cheshire; Some Who Are Staying Won't Vote To Dissolve*, February 2, 2003 at D1.

[121] Section 3704.06(B) of the Ohio Rev. Code provides that "[t]he attorney general, upon request of the [director of environmental protection], shall bring an action for an injunction, a civil penalty, or any other appropriate proceedings in any court of competent jurisdiction against any person violating or threatening to violate section 3704.05 . . . of the Revised Code."

We should note that the Cheshire residents we spoke to were highly skeptical about the political will of state regulators to act against AEP. In their view, Cheshire was in a politically disenfranchised part of the state of Ohio and AEP was a major force in Ohio politics. They believed that they had little or no chance of getting regulators to intervene on their side in this dispute. Harrison II, *supra* note 31. Hammond interview, *supra* note 43.

Given that courts have very broad discretion in deciding whether to grant injunctive relief, it is very difficult to predict with accuracy how the residents would fare. In deciding the matter, a court would need to balance the equities, and assess the respective harm to each of the parties from granting, or denying, injunctive relief. It bears emphasis, though, that unlike in *Boomer*, in our case, injunctive relief would probably not mean an order to shutdown the plant. All it means, rather, is ordering AEP to abate the pollution. As we explain below, AEP could have implemented at least three measures, at varying costs, to achieve this result. The mere existence of these alternatives strengthens the case for injunctive relief. The court would also be likely to give weight to the fact that the town itself, and many of the residents, was there before the plant was built, and long before the pollution problem started.[122]

Despite the findings of Laycock's comprehensive study—which showed that plaintiffs typically get the remedy they seek[123]—obtaining an injunction is not a forgone conclusion. In light of the modern judicial proclivity against injunctions, one should not overestimate the likelihood of obtaining such relief. Holding ourselves to this standard, we therefore conclude that the residents would have had a non-negligible chance of securing injunctive relief, if they had chosen to litigate. Moreover, even a credible threat to sue could have improved the residents' bargaining position, since such a lawsuit would likely have had an adverse effect on AEP's reputation, which the company would probably have been eager to avoid.

And yet, not a single resident chose to take AEP to court.

B. Holdouts

Holdouts have pride of place in economic theory. Transaction costs economics predicts that bargaining with a large number of entitlement holders, each of whom could veto the entire project, will invariably create a holdout problem. This problem arises from the fact that each seller is the marginal claimant for the entire deal, and as such has the power to extract the full bargaining surplus. Suppose that in order to construct a new residential development, the builder needs to acquire 10 adjoining properties. The deal is worth $10 million to

[122] On the principle of "first in time" in property *see generally,* Dukeminier & Krier, *supra* note 84, at 3, 14-15, 24.

[123] *See* Laycock, *supra* note 20, at vii ("[p]laintiffs usually get the remedies they seek, because courts usually find that other remedies are inadequate.")

the builder, and each resident values her property at $100,000. Given that the bargaining surplus is $9 million, the project is welfare enhancing and should therefore be undertaken. However, each resident knows that if the 9 others agreed to sell for $100,000, she could extract up to $9.1 million—the builder's entire surplus from the project. Reasoning backwards, each resident would strive to be the last person to sign on, leading to the failure of the project. Anticipating this dynamic, buyers would normally abstain from negotiating with groups, since such negotiations are likely to generate high transaction costs with little hope of success.

The Cheshire buyout deal was susceptible to two kinds of holdouts. First, each resident could refuse to deal, and instead, bring an action for a nuisance against AEP, seeking to enjoin the pollution. We refer to this possibility as "the injunction holdout." Second, since AEP was planning to expand its operation, the company needed to construct a new dock on at least some of the properties held by Cheshire residents.[124] The affected residents were therefore in a position to block the expansion plan by refusing to sell. We refer to this strategy as the "expansion holdout."

1. The Pollution Holdout

For any resident in a pollution dispute, the issue is not whether she can hold out, but rather which action produces the greatest payoff in monetary and nonmonetary terms. Since the issuance of an injunction is a probabilistic event, and the payoff is also uncertain, it is very difficult to choose between settlement and litigation. The case of Cheshire is illustrative. Once again, we will venture into the unknown, and offer some speculations about the potential payouts from litigation. We present two scenarios, which are meant to give high- and low-end estimates of a resident's expected return from refusing to sell and instead seeking an injunction against AEP. The point of this exercise is to approximate the thought process of pollution victims who must decide, under real world conditions, which course of action to pursue. The numbers we use are perforce

[124] Properties along the banks of the Ohio River were of course the most desirable from this perspective. Beyond these properties, however, AEP presumably needed someplace to store the coal it would bring in, and also had to obtain access to the river-front land. Hence, the company probably needed to acquire additional land for its planned expansion.

highly imprecise, and should be used only to give a rough back-of-the-envelope measure of the orders of magnitude involved.

Our analysis of Ohio's nuisance law shows that the residents of Cheshire might have obtained an injunction against AEP. For purposes of our discussion, we put this probability at either 30 or 60 percent. The injunction would probably order AEP to abate the nuisance without specifying a particular method for achieving this outcome. We assume that AEP would attempt the least-costly means of abatement first. This would most likely be the magnesium/calcium injections described earlier,[125] whose cost we estimate at between $14 and $21 Million.[126] We estimate that this technology has a 70 - 90 percent chance of substantially eliminating the nuisance; if it turned out to be unsuccessful, AEP could probably eliminate most or all of the blue plume by switching to low-sulfur coal, thereby reducing its SO_3 emissions. We guess this might cost between $100 and $200 Million, and assume it has an 80 – 95 percent chance of successfully eliminating the nuisance. Finally, if all else were to fail, AEP could shut down the plant, whose value is roughly $2-3 Billion.[127]

Table 2 lays out our rough calculations of the value to the residents of securing an injunction.

[125] See note 45, *supra*, and accompanying text.

[126] Whether the cost of the technical solution is properly viewed as an advantage of securing an injunction is not straightforward. AEP had apparently promised to clean up the SO_3 emissions (using this technical solution) even before it agreed to purchase the Cheshire properties. Hence, an injunction securing the right to 'force' AEP to do something that it was arguably going to do without the injunction would be worth nothing to a Cheshire resident. On the other hand, if the only reason for AEP's announcement that it would clean up the pollution was fear of litigation by the residents, then the company might have decided not to install the cleanup technology once most of the town agreed to sell. In that case, the right to force AEP to install this technology would be valuable to any holdouts who obtained this right.

Were we to assume that AEP would have installed the new technology to comply with EPA regulations regardless of the outcome of the buyout, the gains from holding out drop from $10.2 to $6 Million.

[127] Here, unlike the celebrated case of *Boomer*, shutting down is not the only abatement measure that seems capable of ending the nuisance. .

Table 2: Expected Benefit of Refusing to Sell and Seeking an Injunction ($ Figures in Millions)			
		Low	High
Probability Injunction Granted		0.3	0.6
Cost of New Technology		$14	$21
Probability Technology Does Not Solve the Problem		0.1	0.3
Additional Cost of Using Clean Coal		$100	$200
Probability Clean Coal Does Not Solve the Problem		0.05	0.2
Plant's Shutdown Value		$2,000	$3,000
Gross Expected Benefit of Injunction		$10.2	$156.6
Plus Expected Health Damages (waived if settle)		$0.1	$0.5
Less Legal Fees of 30 percent		$8.5	$129.2
Net Present Value		$5.9	$90.5

Source: authors' estimates. See text for explanation.

Under these assumptions, the gross expected value of refusing to sell and obtaining an injunction ranges from $10.2 Million to $156.6 Million.[128] As noted earlier, the lower bound could be substantially smaller than $10.2 Million if the odds of obtaining an injunction were significantly lower, or if AEP would not have installed the cleanup technology but for a fear of litigation by the residents.

A final consideration the residents ought to have taken into account is the cost of settling. Recall that in exchange for the buyout, the residents agreed to waive their future rights to sue for health injury related to the plant's pollution. This waiver may be costless, if

[128] Under our assumptions, the shutdown value of the plant has relatively little influence on the final value of holding-out because it is so unlikely that a shut-down would be necessary. Even if the shutdown value were 0, it would only reduce the Gross Expected Benefit to between $7.2 and $48.6 million.

The estimated likelihood of success in pursuing injunctive relief does have a strong effect on the overall valuation. If the chance of a successful injunction were only10 percent, this would lower the gross value to $3.4 million, which is still an order of magnitude larger than the sums individual residents actually received.

the plant posed no health risk to the residents, as AEP maintains. On the other hand, the waiver may represent an enormous cost to the residents if their health was adversely affected by the pollution. Estimating the cost of the waiver is tricky for two additional reasons. First, it often takes years for health injuries to manifest themselves. Second, medicine is an ever-evolving field, and it is quite possible that health effects that are currently unknown will become known in the future.[129] That said, all current indications suggest that there is relatively low chance of serious injury from the exposure so far, so we made a rough guess that the expected damages might range from $100,000 to $500,000.[130]

Even after deducting 30 percent to cover legal fees and allowing for the time value of money,[131] the bottom line seems to be that there is a substantial monetary gain to remaining and seeking an injunction against the plant—in the range of $6-$90 Million. Not included in this calculation are any gains the residents might be able to extract from the adverse publicity that a nuisance suit would cause AEP. It seems plausible that in this situation, AEP could suffer serious reputational harms, the cost of which could run in the millions.[132] Indeed, if the residents were also to prevail, their victory could have precipitated similar lawsuits against AEP in other locales. Moreover, a reputation as an insensitive polluter could damage AEP politically,[133] subjecting it to closer regulatory scrutiny. The potential damage to AEP's

[129] It is also possible that if health effects could be proven in the future, courts would simply disregard the waiver and allow the residents to bring an action against AEP. In this case, of course, the waiver came at no cost to the residents, and correspondingly was of no value to AEP.

[130] Many residents are elderly, and would therefore probably die before any negative effects would be felt.

[131] Suppose litigation over nuisance liability and the granting of an injunction took 4 years. At an interest rate of 5% per year, the Present Value of the $8.5 Million would shrink to about $5.9 Million.

[132] Since we have no empirical basis for valuing the reputational harms to AEP from the residents' litigation, any attempt by us to provide a more accurate figure would be purely speculative.

[133] Of course, the reputational argument runs both ways. AEP's decision to deal with the residents runs the risk that it will come to be known as a 'soft touch,' potentially subjecting the company to threats of litigation from residents near its other facilities. It is quite possible that AEP's characterization of the settlement as a deal to purchase land for the expansion of the plant, rather than a settlement of a nuisance dispute, may be designed to forestall such a reputational risk. By couching the transaction as a unique, site-specific purchase, the company undermines the ability of potential litigants to rely on the Cheshire precedent.

reputation increases the threat point of the residents and therefore augments their incentive to pursue an injunction, although by how much we can not be sure.

2. The Expansion Holdout

In explaining its decision to buy the town of Cheshire, AEP adamantly insisted that its decision was in no way related to fear of liability.[134] Instead, it consistently argued that the point and purpose of the deal was to secure necessary land for the construction of an expanded coal unloading facility, which would alleviate a bottleneck in the plant's operation. Assuming that AEP was not bluffing, it is clear that at least some residents—most likely those with riverfront property—were in position to block the deal by refusing to sell their property. As is the case with all instances of coordinated development, each resident could refuse to convey her fee simple to AEP, and any attempt to take non-consensually would be enjoined by trespass.

It is important to note, however, that AEP never disclosed how many properties it need to acquire to construct the dock, which, in turn, made it difficult for any resident to predict the extent of her holdout power. The residents' potential holdout power was further eroded by the fact that it was impossible for them (or us) to determine the credibility of AEP's plan to build the dock. Furthermore, it bears emphasis that holding out with respect to the dock plan, even if credible, creates a different threat point than winning an injunction in a pollution suit. Blocking the construction of the new dock would have given the residents the ability to negotiate over additional profits AEP stood to gain from the expected reduction in operation costs, but would not have affected the company's existing operation. Since AEP never disclosed how much money it looked to save by building the new dock, it is impossible to put a value on the residents' ability to prevent AEP from carrying out its plan.

3. Summary

How does all this cash out? There are clearly substantial intangibles at stake in litigating the Cheshire pollution dispute. Some of the uncertainties are so large that any attempt to assign dollar values to various outcomes and then arrive at an overall expected

[134] See, e.g., Teather, *supra* note 33.

value to the plaintiffs strikes us as hopeless. Yet, it seems that even on a very conservative (pro-defendant) calculation, there were millions of dollars that could be collected by a successful litigant, and the probability of success was not vanishingly small.

Based on the expected payout from litigation, one would have expected that some of the Cheshire resident would find the gains from litigation high enough to justify a refusal to sell on AEP's terms. But no one did. Thus, it remains a puzzle that among the 220 residents of Cheshire, not a single person concluded that holding-out was preferable to selling.[135]

It is the task of the remainder of this Article to explain why the residents left so much money on the table, and to explore the implications of this case for legal policy and economic theory.

IV. EXPLAINING THE ABSENCE OF HOLDOUTS

One possible explanation of the Cheshire's residents' failure to bring a lawsuit against AEP is simply that they were uninformed about the law. In his classic study of land use disputes in Shasta County, California, Ellickson found that residents rarely resorted to legal action on account of the high cost of learning legal rules, as well as a preference for resolving disputes extra-legally, even when the rules were known.[136] Although Cheshire is also a rural community, the cost of learning the law played no role in the decision not to sue. On the contrary, the stakes here were high enough so that both AEP and the residents obtained legal representation, and lawyers played a key role in Cheshire. Yet, Ellickson's work is instructive in that it highlights the importance of viewing things from the affected parties' perspective.

A. Social Norms

In attempting to explain the absence of holdouts in Cheshire, the first factor that comes to mind is social norms. Many studies have

[135] It should be noted that a handful of residents refused to sell to AEP. While these residents had various reasons for refusing to sell, none of them indicated an intention to seek a higher payoff by suing AEP or blocking construction of the dock. Thus, the handful of owners who refused to deal should not be viewed as holdouts because the critical strategic motivation was absent. Rather, as we explain in greater detail in Part VI, *below*, they should be termed "hold-ins," who place an extraordinarily high subjective value on their continued presence in Cheshire.

[136] Ellickson, *supra* note 8, at 123-36.

established the potential of social norms to coordinate behavior, especially in small communities such as Cheshire. The works of Ellickson,[137] Bernstein,[138] McAdams,[139] Ostrom,[140] and Eric Posner,[141] among others, repeatedly demonstrate the ability of close-knit groups to discipline individual members to resist the temptation to behave strategically and act instead in a way that maximizes group welfare. The social norms explanation seems to fit Cheshire readily. Cheshire was no doubt a close-knit community with strong interpersonal ties among its residents.

While we do not seek to downplay the possibility that social norms curbed to some extent the incentive to hold out, they were not on their own responsible for the outcome in Cheshire. The social norms story runs into two separate problems. First, social norms are most effective when long-term interaction among group members is expected. Individual members have an incentive to abide by the social norms because the long-term benefits they derive from the community exceed the immediate gains they can get from deviation. Social norms are enforced through a "tit for tat" mechanism,[142] under which present deviations will be punished in the future. Obviously, none of these conditions obtain in the Cheshire case, where the community had reached an end point. All members knew that the community was about to unravel, and thus, the incentive to defect should have dominated the incentive to cooperate. The only incentive to cooperate the residents have was sentimental—go along for the "old times sake."

Second, according to our sources, the buyout offer did not require unanimous consent from the residents. AEP required simple majority approval for the offer to go forward. While AEP might have relied on social pressure to forge the requisite majority, such pressure

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[137] Ellickson, *id.*

[138] *See* Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992).

[139] *See* Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 Mich. L. Rev. 338 (1997); Richard H. McAdams, *Comment, Accounting for Norms*, 1997 Wis. L. Rev. 625

[140] See e.g., Elinor Ostrom, *Collective Action and the Evolution of Social Norms*, 14 J. ECON. PERSPECTIVES 137 (2000).

[141] *See generally,* Eric A. Posner, SOCIAL NORMS (2000).

[142] *Cf.* Paul G. Mahoney & Chris W. Sanchirico, *Competing Norms and Social Evolution: Is the Fittest Norm Efficient,* 149 U. PA. L. REV. 2027 (2001) (proposing to change the terminology to "def for dev," which stand for defect for deviate.).

cannot adequately explain the decision of almost all the residents to agree to the buyout.

Therefore, in our opinion, social norms are not a plausible explanation for the absence of holdouts in Cheshire. More generally, our analysis casts doubt on the ability of social norms to prevent holdouts in dissolving communities. We contend that the more plausible explanation for the cooperative behavior in Cheshire lies in the interdependence among individual residents in close-knit communities created by the amenities that such communities provide. Thus, while norms per se are not responsible for the end game result, the focus on social interaction highlighted in the norms literature provides a helpful reference point for our analysis.

B. The Realities of Nuisance

The cut and dried discussion of nuisance disputes in classrooms and stylized articles fails to capture the very essence of nuisance situations. The legal focus of the discussion blinds the reader to non-legal factors that regulate the behavior of the parties to a much greater extent than the law does. In this part we highlight two largely overlooked factors—the harsh reality of living with pollution for the residents and reputational stake for the polluter.

1. Living by a Polluter

Unlike other torts, pollution, being a continuous tort, has a daily effect on residents. This factor dramatically diminishes the viability of litigation as a solution for pollution victims, especially those with children. The constant fear and inconvenience experienced by the Cheshire residents made them largely indifferent to how much they could get by holding out. The case of Ron Hammond is representative. A high school teacher, Ron moved into Cheshire in 1985 when he was still single. He subsequently married and started a family. Ron's older daughter suffers from severe asthma. While Ron does not blame AEP for his daughter's medical condition, he does attest that AEP's made his daughter's life, and the family's as a whole, virtually unbearable. The pollution aggravated his daughter's preexisting condition, and on several occasions she needed hospitalization. To minimize his daughter's exposure to pollution, the Hammonds took severe precautions. Every day, they had to check the SO_2 monitor at the town hall, and when the pollution count was high, they did not let their daughter play outside. To allow their daughter to

ride her bike, the Hammond's were forced to travel 20 miles each way. Every day was a challenge.

For the Hammonds, exhausting the litigation course was not even an option; their goal was to leave Cheshire as soon as possible. As Ron Hammond told us, " I would leave yesterday, if I could." Of course, he could not. The Hammonds' only asset was their property, and their property was worthless because of the pollution.[143] The pollution placed the Hammonds in a terrible bind: it, at once, provided them with an strong incentive to leave and deprived them of the ability to do so. The Hammonds made it clear to everyone that they would leave at the first chance they got. For them the buyout offer could not have come sooner. Their concern for their children's health trumped any monetary consideration. Ron firmly believes that their continued stay at Cheshire adversely affected the long run health of his children. Holding out in the hope of receiving more money from AEP was an inconceivable strategy.

Other residents with children echoed the sentiment. Jennifer Harrison stated that on certain days when the blue plume blanketed the town, her children, who were perfectly healthy, suffered from debilitating headaches and respiratory difficulties. She too strove to find a way to get her children out of Cheshire. Needless to say that this reaction is perfectly rational. Indeed, it is hard to think of a parent who would risk the future of her children in exchange for a larger amount of money. The children's health factor, therefore, played a much greater role in the decisionmaking process of the residents than the rights and powers they were afforded by the law. The time value for the residents was not, and could not be, captured by any standard discounting rate. To residents with children, the potential cost of staying was simply prohibitive. But leaving was also very difficult or impossible. The residents were faced with a real-world liquidity constraint that is conveniently overlooked by theoretic models of nuisance disputes.

Another group of residents who could not afford to wait, but for a different reason, were the senior citizens. For them, the concern was that they would not live to see the outcome of the litigation. Residents revealed to us that their lawyers' estimated that the litigation process,

[143] In theory, it might have been possible for the Hammonds to move out and rent their property to someone else. However, this solution was essentially foreclosed by the thin market for properties in Cheshire, which vanished altogether after the blue plume began to appear in 2001.

with all the appeals, could take 10 years. For many of the residents, in their 70's and even 80's, litigation was a dubious prospect, one whose benefits would never be reaped.

The length and cost of litigation made law largely irrelevant for some of the residents. Conversely, these factors gave substantial leverage to AEP in negotiating a buyout deal in the (relatively short) shadow of the law and (the much longer) shadow of its stacks.

2. Reputational Stakes

Another factor that seems to have played a more important role than law in the Cheshire story was the media.[144] Indeed, the media was instrumental in leveling the play field. The residents realized AEP's sensitivity to reputational harm relatively early in their struggle. Originally, AEP's operations were causing not only pollution but also excessive noise. After all of the residents complaints fell on deaf ears, they decided to bring their grievances to the local press. The effect on AEP was immediate; it corrected the noise problem right away. However, by so doing, it betrayed a weak spot for negative media coverage.[145]

The residents took full advantage of this Achilles heel. They were able to interest the COLUMBUS DISPATCH in their struggle.[146] The result was a series of articles entitled "Cheshire—Death of a Village." The newspaper even volunteered to conduct, at its own expense, a laboratory test to determine whether the soil in the village was contaminated. Furthermore, the town invited Mary Beth Lane, the Dispatch's reporter, to spend a month in Cheshire. The invitation was accepted.

AEP's reaction was two-pronged. First, it tried to demonstrate to the journalists that it was making a sincere effort to curb the problem. For example, during Mary Beth Lane's sojourn in Cheshire, AEP apparently started experimenting with clean, low sulfur coal—an experiment that was apparently discontinued after the departure of the journalist.[147] Simultaneously, AEP, whose headquarters is located in Columbus, attempted to discredit the Dispatch's coverage in the Ohio

[144] As noted above, the story of Cheshire attracted coverage from many big-city newspapers in the US, as well as from media in France, Germany, and England.

[145] Harrison interview II, *supra* note 31.

[146] The capital of Ohio, Columbus is located about 2 hours drive from Cheshire, and the Dispatch is the region's most important newspaper.

[147] Jennifer Harrison II, *supra* note 31.

business community. For example, according to Mary Beth Lane, "[t]he company has voiced its concern, from time to time, about the number of stories we have published about Cheshire and the tone of the stories. AEP [thought] the newspaper has gone overboard on the coverage.[148] And Ben Marrison, the editor of the Dispatch told us that "[AEP] has tried to chide us for our coverage, making remarks about our coverage being excessive, and calling the Dispatch the 'Cheshire Dispatch.'"[149]

Of course, the Dispatch was not the only media outlet interested in the Cheshire story. The blue plume attracted considerable attention from national and international news media after the buyout offer was made.[150]

The involvement of the media provided a strong inducement to AEP to bring closure to the Cheshire problem as soon as possible. The bad press seems to have been a thorn in AEP's side. It is quite possible—as some residents suggested to us—that AEP considered the amount paid to the residents to be "shut-up" money.[151] The continuous interest of the press in Cheshire offset the "time factor" that favored AEP.

So far, we have explained why some of the residents were reluctant to holdout, and explored AEP's motivation to settle. However, to get a full view of what happened in Cheshire it is imperative to consider another more important factor—community externalities—to which we turn next.[152]

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[148] Email correspondence with May Beth Lane, February 12, 2003.

[149] Email correspondence with Ben Marrison (editor, Columbus Dispatch), February 12, 2003.

[150] See, for example, *Fox on the Record*, May 13, 2002 (Interview by Greta van Sustern, with Cheshire resident Ron Hammond and AEP spokesman Pat Hemlepp); Barry Serafin, *Residents of Cheshire, Ohio Move Out of Their Polluted Town*, ABC Nightly News, May 13, 2002; Katharine Q. Seelye, *Utility Buys Town It Choked, Lock, Stock and Blue Plume*, NY TIMES, May 13, 2002, at A1.

[151] Harrison II

[152] The irrelevance of law parallels Ellickson's findings from Shasta County, albeit for different reasons. In Shasta County, law was largely irrelevant because it was supplanted by social norms, and because the cost of learning the law was too high. Ellickson, *supra* note 8, at 123-36. In Cheshire, people seemed aware of their legal rights, but could not make use of them since them were superceded by extra-legal factors. It is important to note, moreover, that the disputes Ellickson chronicled in Shasta County took place among community insiders; in Cheshire, the dispute was essentially between the community and an outsider—the Gavin Plant and AEP.

C. Community Externalities

The existence of communities provides certain benefits for individuals that they would not otherwise be able to enjoy.[153] One set of benefits consists of amenities, such as schools, parks, police and health services, and even stores. Some of these are classic public goods, while others, such as schools and stores, may be provided privately but cannot exist without sufficient demand to cover their fixed costs of operation.[154] A second important set of benefits that communities provide stem from the social interactions that they make possible. Ties of friendship are goods most people value quite highly and actively seek out. Such interpersonal networks often arise from physical proximity and commonality of interest over long stretches of time.[155] As a result, each resident in a community has a stake in the continued presence of other members, and simultaneously bestows a benefit on them by her own presence.

The externality aspect of community arises because each individual member does not take account of the benefits she provides to others in the community when deciding whether or not to depart. Consider Alan Ehrenhalt's description of the parish of St. Nicholas of Tolentine on Chicago's Southewest side during the 1950s.[156] Part of the way that residents participated in community life was by sitting out on their stoops and chatting, gossiping, and watching each other.

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[153] *See* generally, Hanoch Dagan & Michael A. Heller, *The Liberal Commons,* 110 YALE L. J. 549, 572-79 (2001) (discussing the social and economic effects stemming from communities).

[154] There are actually two large literatures on the economics of cities. The older literature views the city as a kind of common property regime, and stresses the divergence between average and marginal congestion costs (and benefits), which can lead to inefficiencies. See, e.g., George Tolley, *The Welfare Economics of City Bigness*, 1 J. URB. ECON. 324 (1974). A newer economic geography literature uses increasing returns and (positive) spillovers to explain the growth of cities. See, e.g., Paul Krugman, *Increasing Returns and Economic Geography*, 87 J. POLITICAL ECON. 483 (1991). Edward Glaeser and others have also written about the importance of social networks or community ties in cities. See, Glaeser, *The Future of Urban Economics: Non-Market Interactions*, 1 BROOKINGS-WHARTON PAPERS ON URBAN AFFAIRS 101 (2000).

[155] For a powerful evocation of the strength and vitality of such communities, see, for example, ALAN EHRENHALT, LOST CITY: THE FORGOTTEN VIRTUES OF COMMUNITY IN AMERICA (1995) (describing life in Chicago neighborhoods in the 1950s), or Kai T. Erikson, EVERYTHING IN ITS PATH: DESTRUCTION OF COMMUNITY IN THE BUFFALO CREEK FLOOD (1976). Robert Putnam's BOWLING ALONE offers a mass of quantitative evidence for the decline of community in the U.S. after the late 1950s.

[156] Ehrenhalt, *supra* at 90-95.

Ehrenhalt's account makes it clear that each resident valued such interactions very highly. With the advent of television, however, residents tended to withdraw from their stoops to their living rooms, where their activities were solitary and did nothing to foster the maintenance of the community. The fact that residents withdrew to watch TV does not indicate that they did placed no value on community, however, as an economist's revealed preference argument might have it. Rather, residents failed to take account of the externalities inherent in supporting community because each neglected the impact of their own withdrawal on the rest of their neighbors. By withdrawing from the community, each resident not only increased his own consumption possibilities, but diminished those available to his fellow residents, an effect of which residents are unlikely to take full account. One might term this the John Donne Effect.[157] The Donne Effect played a significant role in Cheshire, for reasons we now explore.

1. Fixed Costs, Availability, and Community Size

Most goods and services cannot be produced without incurring some fixed costs. These setup costs introduce a "lumpiness" or indivisibility in the availability of many commodities. A restaurant, gas station, or grocery store each requires set-up costs that do not depend on the number of customers served. Hence, such operations cannot be scaled-down to an arbitrarily small size, because without enough customers, they cannot cover their fixed costs or operate at a profit. Given these fixed costs, and an inability to serve those who live outside a limited geographic boundary, the availability of goods and services at a particular locale depends on the population size and density. Therefore, it is not surprising that there is no French restaurant in Fergus Falls, or classical radio station in Ketchikan; the local population with the requisite tastes is not large enough to cover the fixed costs of these activities. [158]

[157] Donne famously wrote: "No man is an island entire of itself; every man is a piece of the Continent, a part of the main." John Donne, DEVOTIONS UPON EMERGENT OCCASIONS, meditation 17 (1624).

[158] Waldfogel calls this a "preference externality." See Joel Waldfogel, *Preference Externalities: An Empirical Study of Who Benefits Whom in Differentiated Product Markets*, RAND J. ECONOMICS (2003). In the case of goods that virtually everyone values–for example, groceries or gasoline–the externality depends only on the size of the community, not the tastes of its individual members. For examples of the unraveling of communities due to the loss of economies of scale when some

Individuals who live in the same geographic market therefore confer a positive externality on each other; each helps defray the fixed costs of providing goods or services that they all value. The magnitude of these community externalities varies with community size; the larger the community, the smaller the marginal effect of each member on the welfare of others.

The application to Cheshire is straightforward. As a town of 220 people, it was big enough to support a single gas station, a coffee shop, and two churches. But if the town were to get much smaller, it would be unlikely that many of these institutions could survive. When a substantial chunk of the population appeared ready to leave, therefore, those who might have been tempted to remain would certainly realize that the shrunken town could not sustain any of these essential amenities, not to mention police or fire services or a school.

In considering whether or not to hold-out in an effort to seek better terms from the buyer, Cheshire residents had to take account of the possibility that if they did so, they might be deprived of the basic social infrastructure that made life possible. It's one thing to refuse to sell while living in your studio apartment in Manhattan, and quite another to remain as the only resident in a ghost town. This was a serious prospect in Cheshire. In short, we suggest that a major reason for the absence of holdouts was the high cost of remaining in a town that had been stripped of most of its amenities by the departure of many of its residents.

2. Friendships and Community Networks

Beyond the joint defrayal of fixed costs in providing essential amenities, a second, and perhaps more important, set of externalities stems from the closeness of small communities, and the resulting interpersonal ties that develop.

Recent economic scholarship has suggested that friendships can be seen as a form of "social capital."[159] Such social capital complements market interaction by allowing actors to achieve

residents left, see Peter T. Kilborn, Mississippi Floods Drain Life From River Towns, N.Y. Times, August 16, 200, at A15 (describing gradual erosion of business community in Winfield, Mo. after residents started to decamp).

[159] See GLENN LOURY, *A Dynamic Theory of Racial Income Differences,* in WOMEN, MINORITIES, AND EMPLOYMENT DISCRIMINATION, P. Wallace and A. Lamond, eds (1977). For a critical assessment of this term, see STEVEN DURLAUF, *The Case "Against" Social Capital*, 20 FOCUS 1 (1999).

mutually beneficial results even when contracting is impossible. In his study of Italy, Robert Putnam has argued that communities characterized by close relationships of trust do better than those in which members act atomisticly. The presence of community may be especially important for the poor, who rely on it as a form of insurance or risk-sharing.[160]

A complementary (and more compelling) characterization of friendships is that they are simply ends in their own right, independent of their economic consequences. In either case, residents who are a part of such communities often value them highly and suffer serious feelings of loss and alienation if they are destroyed.[161]

The closeness of the community was emphasized by almost every Cheshire resident willing to speak to reporters.[162] To be sure, not everyone harbored a sentimental attachment to the town.[163] But there seems to have been a substantial majority who did. Jennifer Harrison, the town clerk and a supporter of the buy-out, may have put it best when she told us that before the buyout plan, the community had been very close, "like *Mayberry*." Despite her support for the

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[160] As Brion noted:

> Especially among the poor, the existence of a matrix of mutually shared values, . . . concern and support is a necessary condition, not just to psychic well-being, but to physical survival itself. . . .The poor must often depend on a web of mutual support . . . with each individual contributing to the others whatever . . . special talents he might have. When [such] . . . exchanges exist, they can . . . reinforce [each other], creating a milieu the value of which far exceeds what the physical reality might suggest. When this milieu is destroyed and its members scattered, it is irretrievably lost.

Denis J. Brion, *The Meaning of the City: Urban Redevelopment and the Loss of Community,* 25 IND. L. REV. 685, n. 78 (1991).

[161] In addition to the sources cited *id.*, consider the description of unsuccessful efforts to rebuild towns in the flood plain of the Mississippi River after they were destroyed in the flood of 1993. See, Kilborn, *supra* n . 158.

[162] We are not trained ethnographers, and we were unable to carry out an extended visit to the town or talk to a comprehensive cross-section of the population. We recognize the possibility that residents–or the newspaper reporters who covered the story–may have had good reason to exaggerate the depth and breadth of sentimental attachment to the town. Moreover, those who were willing to speak out could have been disproportionately nostalgic or satisfied with things as they were. Nevertheless, the evidence for strong communal ties is, we believe, compelling, especially since many residents had lived in the town for many years, with several families tracing their ancestors back several generations.

[163] To some residents, "the crux of the deal is money: With the giant smokestacks, coal piles and conveyor belts looming over Cheshire, their property values are shot. They're thrilled with what they see as a once-in-a-lifetime chance to unload their homes for at least twice the assessed values." Simon, *supra* note 32.

deal, she expressed disappointment that the residents were all going to scatter when the plan went through.[164] Many others voiced similar sentiments.[165]

The same feelings were conjured up in a poem written several decades ago by village resident Helen Preston, which begins "The little town of Cheshire where I live is very, very small./But it's home with precious happy memories to us one and all." An interview with Preston, age 88, revealed that her family has lived in the immediate area for more than 200 years, with an ancestor who was born near Cheshire in 1800. Several generations of her family are buried in the local cemetery, which is named for her great-grandfather, Benjamin McCarty, and occupies the former site of the family's farm near town. Preston's sense of connection with the past is palpable. "Family history lives on in [her] living room as well, where she keeps photographs, souvenirs and yellowed newspaper clippings in a large suitcase next to her favorite armchair. She has a saying: 'If the house ever gets afire, grab that suitcase.'"[166]

In another interview, Preston noted that "'[t]his little village has been my whole life. If a majority sells, I don't want to just sit here in the coal yard. . . . I reckon my best bet is to get out. . . . I'm between the devil and the deep blue sea. All my friends and neighbors are here and we'll be scattered like ducks. I'm not able to just pick up 50 years worth of plunder and furniture and move."[167]

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[164] Harrison I, *supra* note 1. Another villager, Mary Fulton, grew up with her grandmother and great-grandmother as neighbors. She chose another fictional analog for Cheshire—Grover's Corner, New Hampshire—remarking that "Life used to be simple here. It was like Our Town." Stephen Buckley, Lights Out In Cheshire, ST. PETERSBURG TIMES, November 10, 2002 at A1.

[165] To be fair, one newspaper reporter said of Cheshire that "It's country, but it's hardly Mayberry. Not everyone knows everyone else. They lock their doors at night." Id. On the other hand, an Ohio reporter observed that "[t]here are perhaps too many trailers in back yards for it to be picturesque, but it's well-kept and homey. It's . . . the kind of place where residents keep their doors unlocked and know the names of every dog in town." James F. Sweeney, Town for Sale, CLEVELAND PLAIN DEALER, June 9, 2002 at L1.

[166] Mary Beth Lane, 'Precious Memories', THE COLUMBUS DISPATCH, July 7, 2002 at 1C.

[167] Tim Jones, Electric Plant Finally Overtakes Small Ohio Town, CHICAGO TRIB. August 11, 2002 at A1. Other Cheshirites describe a deep emotional attachment not just to the people of the town, but to the site itself, and its scenic location on the banks of the Ohio River. "'It becomes a part of you, and you become attached to it . . . I think, as opposed to blood, I have Ohio River water coursing through my veins.'" Rita Price, Watery Highway, COLUMBUS DISPATCH, September 1, 2002 at B1 (quoting Cheshire resident Elizabeth Bailey).

Another measure of the strength of the community comes, paradoxically, from the animosities that developed in the wake of the decision to sell. Residents who felt they were forced into the sale blame those who engineered or supported the deal, even though the latter group did so only reluctantly. This suggests that at least some sellers felt coerced into selling, and agreed not because they valued their property at less than the price offered by AEP, but because they stood to lose both the value of their home and the value of their community ties if they refused to sell.

For example, Jeannie Elkins Mollohan, is a 41-year-old grocery store worker who "attended the local high school, River Valley High, and is trying to organise (sic) a 25-year reunion for the class of 1978. 'This is a sad end for the town,' she said. 'I have a co-worker in his 50s who lived there all his life with his mother and now they have to pull up their roots. What else can they do? It's a tragic situation and for the people affected I can see a righteous anger.'"[168]

One early advocate of the sell-off found that his daughters "suffered relentless teasing [at school]: 'Can I shake your hand?' classmates would say. 'I've never shaken the hand of a millionaire before.' No one sat near the family at high school football games."[169] At one game, someone called the father 'Judas.'[170] Gladys Rife, another long-time resident, commented to a reporter: "'Honey, listen, this deal has caused more problems.... Friend against friend, neighbor against neighbor, family against family. So many hard feelings. I'm praying it doesn't go through.'"[171] What this hostility suggests is that even with generous compensation, many residents felt that they were coming out behind by selling. In our terms, they felt they were undercompensated for the loss of their community.

In another example of life imitating art, Gladys Rife was interviewed after ". . . switch[ing] off an Andy Griffith Show rerun with a snort of disgust. 'Cheshire is nothing like that [anymore],' she says, gesturing to the TV screen."[172]

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[168] David Teather, Smoke, Tears, Anger–Then Emptiness–in the Village Bought by a Power Company, THE GUARDIAN, May 13 2002.

[169] Stephen Buckley, Lights out in Cheshire, ST. PETERSBURG TIMES, November 10, 2002 at A1.

[170] Id.

[171] *See,* Stephanie Simon, *supra* note 32.

[172] *Id. id.*

Interpersonal networks are costly to create and maintain, however. Also, much of the value inherent in interpersonal networks is not transferable to other locations. In that sense, friendships resemble an investment in firm-specific human capital.[173] Interpersonal ties are an asset that is bound to lose some of its value with dramatic changes in the makeup of communities. The profound interdependency that exists in small close-knit communities is responsible for their cohesiveness and stability; it was certainly a hallmark of Cheshire. But paradoxically, the very cohesiveness of such communities may lead to problems of undercompensation when they dissolve.

3. Community Externalities and Individual Decisionmaking

Interdependencies have long been known to affect individual decisionmaking. Perhaps the most famous example of this effect is Thomas Schelling's explanation for dynamic resegregation in the housing market.[174] In Schelling's tipping model, the exit of the least tolerant white property owners upon minority entry reduces the attractiveness of the neighborhood for the remaining white residents and precipitates their departure.[175] Although Schelling worked on a different problem, his analysis is illuminating in that it highlights the impact of others' decisions on one's utility in close communities, and captures a dynamic that also seems to account for the result in Cheshire.

An even more important reference point for our analysis of Cheshire is the study of coercive tenders in corporate law. In a series of articles in the 1980's, Lucian Bebchuk outlined the coercive effects of tender offers.[176] As Bebchuk's analysis reveals, interdependencies

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[173] GARY BECKER, HUMAN CAPITAL (3rd. ed. 1993).

[174] *See,* Thomas C. Schelling, MICROMOTIVES AND MACROBEHAVIOR 140-55 (1978); *A Process of Residential Segregation: Neighborhood Tipping*, in RACIAL DISCRIMINATION IN ECONOMIC LIFE (A. Pascal ed., 1972); *Dynamic Models of Segregation,* 1 J. MATH. SOC. 143, 167-71 (1971).

[175] For critical discussion of Schelling's theory, See Abraham Bell & Gideon Parchomovsky, *The Integration Game*, 100 COLUM. L. REV. 1965, 1985-89 (2000) (delineating the limits of Schelling's tipping model).

[176] See Lucian Arye Bebchuk, *The Case for Facilitating Competing Tender Offers*, 95 HARV. L. REV. 1028 (1982*); The Pressure To Tender: An Analysis and a Proposed Remedy*, 12 DEL. J. CORP. 911 (1987); *Toward Undistorted Choice and Equal Treatment in Corporate Takeovers*, 98 HARV. L. REV. 1695 (1985). Numerous others have noted these coercive effects as well. *See, e.g.,* Edward F.

among shareholders allows for the possibility that a carefully-designed offer to buy may make it rational for some owners to sell their shares at prices below what they believe the shares are worth. This coercion occurs because the offer to buy immediately explicitly or implicitly contains a threat not to buy at all, or to buy only at a lower price, in the future. The discount on future purchases forces shareholders to choose between tendering their shares at the front end price specified in the offer, or waiting and facing a lower price in the event that the takeover succeeds. So long as the front-end price is higher than the back-end price—and it always is—a shareholder who believes that a tender offer will succeed is best advised to sell immediately.

Empirical studies indeed verify that the front end share price specified in tender offers generally exceeds the market share price both prior to the announcement of the proposed takeover and subsequent to its successful completion.[177] That is, the front-end price is usually the best price available for a share, unless another suitor presents an offer superior to that of the raider's. Thus, even if a shareholder believes that the "true" value of the share is greater than the front-end price of the share, she will tender her shares, so long as she believes that the tender offer is likely to succeed. As several commentators have noted, the tender offer places shareholders in the familiar position of players in a prisoners' dilemma, in which players are compelled to act against their own best interest.[178]

Greene & James J. Junewicz, *A Reappraisal of Current Regulation of Mergers and Acquisitions*, 132 U. PA. L. REV. 647 (1984); Michael C. Jensen & Richard S. Ruback, *The Market for Corporate Control: The Scientific Evidence*, 11 J. FIN. ECON. 5 (1983); Louis Lowenstein, *Pruning Deadwood in Hostile Takeovers: A Proposal for Legislation*, 83 COLUM. L. REV. 249 (1983); Elliot J. Weiss, *Defensive Responses to Tender Offers and the Williams Act's Prohibition Against Manipulation*, 35 VAND. L. REV. 1087 (1982).

[177] See studies discussed in Lucian Arye Bebchuk, *The Pressure to Tender: An Analysis and a Proposed Remedy*, 12 DEL. J. CORP. L. 911 (1987); David W. Leebron, *Games Corporations Play: A Theory of Tender Offers*, 61 N.Y.U. L. REV. 153 (1986). *See* also J. Gregory Sidak & Susan E. Woodward , *Takeover Premiums, Appraisal Rights and the Price Elasticity of a Firm's Publicly Traded Stock*, 25 GA. L. REV. 783 (1991).

[178] See, e.g., Lucian Arye Bebchuk*, The Pressure To Tender: An Analysis and a Proposed Remedy*, 12 DEL. J. CORP. 911 (1987); John C. Coffee, Jr. and William A. Klein, Bondholder Coercion: *The Problem of Constrained Choice in Debt Tender Offers and Recapitalizations,* 58 U. CHI. L. REV. 1207 (1991); Jeffrey N. Gordon**,** *Choice Ties that Bond: Dual Class Common Stock and the Problem of Shareholder Choice,* 76 CAL. L. REV. 3 (1988)**;** Robert A. Prentice, *Front-End Loaded, Two-*

The analogy to communal buyouts is straightforward. The same group dynamics that prompt shareholders to tender their shares involuntarily are also liable to spur members of small communities to sell their properties to a polluter. The fear of being left at the back end, with the attendant adverse consequences, and the difficulty of coordinating a collective response, may cause property owners to accept offers they would otherwise reject. As in the corporate context, this means that polluters should be able to buy small towns at a price lower than the aggregate value assigned to them by their residents. A simple numeric example illustrates the point.

Assume that Tinytown is a small community with 200 residents, each of whom owns an identical house with a market value of $100,000. All residents also value the close nature of their community, but they vary in their valuation of this attribute: half value it at $20,000 and half at $80,000. Hence, the total value of Tinytown to its residents is $30 million. Assume now that Pacific cement wishes to open a new plant in the vicinity of Tinytown. The expected value of the new plant to Pacific is $25 million. However, the plant will cause pollution that will entirely wipe-out the value of the residents' properties. Rather than litigating, Pacific can offer all residents to buy their property for $125,000. Even though the offered price is considerably lower than the subjective valuation of half of the community members, all of them will agree to sell. The low value owners will sell because the offer price exceeds the amount they place on their continued residence in Tinytown. The high value owners will sell because they realize that once the low value neighbors depart, the $80,000 value they place on the community will also vanish.[179] Of

Tiered Tender Offers: An Examination of the Counterproductive Effects of a Mighty Offensive Weapon, 39 CASE W. RES. L. REV. 389 (1989).

There is much dispute about the reason why front-end prices should be higher than back-end or pre-tender-offer prices. Clearly, the raider believes that the shares are undervalued at market price. This may be because she believes that the market price does not sufficiently reflect the available information concerning the target corporation's prospects for future earnings. Or it may be because she believes that if she is able to take control of the corporation, she will be able to introduce superior management or synergy, and thereby improve the target corporation's profitability. Or the raider may intend to use control of the corporation illicitly to divert corporate profits away from the corporation (and, thereby, away from the minority owners) to herself. For our purposes, the motives of the raider are irrelevant. It is important only to note that the price differential between the front-end and back-end prices pressures shareholders to tender.

[179] True, they may still bring a lawsuit against Pacific Cement, but all they will be able to recover now, if they win, is the market value of the property, i.e., $100,000.

course, this result is undesirable from an efficiency standpoint since the value of the town to the residents as an ongoing entity exceeded its value to the polluter.

In real life, additional factors may enhance the residents' incentive to sell at a discount. First, the distribution of values may be more variable and may vary continuously with the size of the community. In our example, there were only two groups of owners, with high and low values. In reality, one should expect to find a continuum of valuations. This should make it easier for a buyer to unravel the community by picking off those most willing to leave. Second, the residents will have to make the decision to sell under conditions of uncertainty about the valuations of their neighbors. We assumed that residents know each other's subjective valuations, which played an important role in their decision to sell. Yet, one's neighbors' valuations are private information that may be neither observed nor verified. Finally, in many pollution settings, there is no real market for the affected properties, and the polluter is effectively a monopsony. In Cheshire, for example, there had been no real estate transactions in the several years preceding the buyout offer. Given that litigation is costly, and its outcome is uncertain, and that homeowners are risk averse,[180] many of them will be inclined to sell to the polluter—even at a steep discount—rather than sue for damages.

One might argue that the high value owners could offer a Coasean 'bribe' to the low value owners to induce them not to sell. In the scenario described in the text, a payment from the high-value owners to the low-value owners of $7,000 in exchange for not selling would leave both sets of residents better off. Such a bribe is unlikely to work, however, for at least two reasons. First, the offer of money necessarily undermines the very existence of the asset that is being "acquired," i.e., friendship. Norms of friendship, by definition, are inconsistent with the monetization of community that this bargain requires. *See, e.g.,* John J. Donohue III, *Prohibiting Sex Discrimination in the Workplace: An Economic Perspective*, 56 U. CHI. L. REV. 1337, 1352 (1989) (arguing that "the very act of paying a bribe [to undo sex discrimination by an employer] will undermine the self-esteem [of workers who have to pay the bribe. Hence,] there are some Coasean bribes that are intrinsically incapable of achieving their goal.") Even setting this obvious problem aside and approaching the matter from a purely economic perspective, such transfer payments are difficult to negotiate unless each side knows the other's true valuation and can credibly commit not to sell if the payment is made.

[180] *See e.g.* William K. Jones, *Confiscation: A Rationale of the Law of Takings*, 24 HOFSTRA L. REV. 1, 6 (1995) ("Owners of property are typically risk-averse"); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L. J. 287, 290 (1988) ("Within a single lifetime, property tends to make the property owner more risk-averse.").

Statements made by Cheshire residents vindicate our analysis. For example, Scott Lucas, the 70-year old former mayor of Cheshire, commented: "[I] realize that even if there isn't any pollution, it sure looks like there is. [I] would have been happy to stay here.... The danger is, if you don't sell [to the plant], your house probably won't be worth a dime."[181] The story of the Macks echoes these sentiments. Married for 63 years, Harold and Odella Mack, ages 84 and 82, lived in Cheshire their entire lives. Both belonged to the Cheshire Baptist Church for that entire period; and Harold, also a former mayor of Cheshire, helped incorporate the village in 1953. They explained that their decision to leave was not due to any health risks, "but because everyone else was pulling up stakes."[182]

An interview with one of the two owners who decided to stay confirms these stories. The interviewee spoke of a "great fear factor," especially among older residents. He said that people were afraid to find themselves living in a "ghost town" if they did not sell.[183] Several things AEP did contributed to the residents' fear. First, they gave departing owners salvage rights. By permitting residents to gut their houses, the salvage provision increased the likelihood that the residences would forever remain uninhabitable. It also raised concerns about exposure to asbestos and other hazards for those who remained. Second, Jennifer Harrison pointed out to us that it was rumored that AEP was planning to turn the entire town into a coal heap. In combination, these developments made it all the more attractive to sell to AEP and bid Cheshire good bye.[184]

Our theory finds further support in the structure of the buyout offer. AEP did not require unanimous consent on the part of the resident. Rather, it requested a simple majority for the deal to move forward. At first, the simple majority requirement seems puzzling as it allows many property owners to remain in place and sue AEP in nuisance if they so choose. However, once community externalities are taken into account, AEP's strategy makes perfect sense. AEP's insistence on acceptance by a simple majority virtually guaranteed that the community would tip-out, sending a signal to the residents

[181] Simon, *supra* note 32, at A1.

[182] Stephen Buckley, Lights out in Cheshire, ST. PETERSBURG TIMES, November 10, 2002 at A1.

[183] An Interview with a resident who asked to remain anonymous, February 10, 2003 [hereinafter: Anonymous interview].

[184] Harrison II, *supra* note 31.

that selling was their only real option.[185] Cheshire, and virtually any community its size, could not remain viable after losing half of its members. It is true that, in principle, AEP did not have to list any majority requirement. The fear of being left at the back-end should have prompted most, if not all, residents to sell. Yet, requiring majority approval as a precondition for the buyout served as an additional anti-holdout measure, providing further assurance that the deal would go through.

What dynamic resegregration, corporate takeovers, and Cheshire have in common is the existence of interdependencies among asset holders that are not fully captured in markets. The existence of interdependencies means that A's decision to sell her house (or shares) influences the value that B places on his asset. A's decisions affect not only her own welfare, but also the well-being of all the members of the relevant community. In sum, A's action generates an externality borne by the other members of the community. It is important to further note the temporal dimension of the problem. Those who sell early get to cash out at an attractive price, while those who stay end up with an asset that has been substantially devalued. Reasoning backwards, rational asset holders should see little choice but to get out immediately rather than wait for the inevitable decline to occur. Naturally, the sell-fast strategy plays into the hands of potential acquirers—be they corporate raiders, block-busters or industrial polluters—who can buy assets for less than their true value.

Social scientists have repeatedly noted the ability of small communities, by virtue of their cohesiveness, to overcome problems of free riding in the provision of collective amenities such as irrigation systems, roads, and other local public goods. The closeness and cohesion of small communities enable a lifestyle that is unavailable elsewhere, and may be viewed as a premium offered by these locales. Paradoxically, the same cohesiveness and close interpersonal ties render members of small communities particularly vulnerable to the threat of buyouts and exercises of eminent

[185] Knowing all this, AEP might have been able to get a better deal by offering to buy only half of the property at a premium over the fair market value, say from the first 45 residents who agreed to sell. This would likely have been even more coercive to residents, and enabled them to acquire the remaining properties at a discount from their market price. However, this strategy might have backfired, leading either to bad publicity for AEP or to increased enmity on the part of those residents who did not get the premium, which in turn could have increased the likelihood of litigation. Farnsworth.

domain.[186] Potential takers can exploit the existence of community externalities to acquire assets on the cheap, even when doing so is inefficient. Correspondingly, members of small communities stand to be seriously under-compensated when their communities unravel, even when they consensually agree to sell.

The case of Cheshire has several normative implications for legal theory and policy. The three areas we chose to discuss are: collective action theory, torts policy, and property policy. We will show that in all three areas, Cheshire suggests some important refinements and policy changes. The lessons of Cheshire warrant close attention because in the aftermath of the Cheshire buyout several other communities are weighing the options of reaching similar deals with polluters.[187] Thus, the normative discussion provided herein may be guide the behavior of polluters and residents in future deals.

V. IMPLICATIONS FOR TORT THEORY

Standard analysis of pollution disputes posits a binary menu of remedies consisting of damages and injunctive relief. The academic literature treats the choice of remedy as the exclusive dominion of the court, over which parties exert no influence.[188] Indeed, the project of law and economics scholars has been to instruct the court how to choose the optimal remedy.[189] On this view, the polluter's and the residents' actions cannot affect the court's choice of remedy.[190]

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[186] We discuss eminent domain infra. In part VII, *infra.*

[187] See examples cited *supra* note 11.

[188] *See e.g.* Richard R.W. Brooks, *The Relative Burden of Determining Property Rules v. Liability Rules: Broken Elevators in the Cathedral,* 97 NW. U. L. REV. 267 (2002) (pointing out that of the various tasks facing the courts "none is more important than choosing how to protect the rights and entitlements of the parties who appear before them.").

[189] *See e.g.* Calabresi & Melamed, *supra* note 10; Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Cosean Trade*, 104 YALE L. J. 1027(1995); James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440 (1995); Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713 (1996).

[190] One might argue that because courts take into account the respective loss to each of the litigants, and hence will consider the polluter's profits, the polluter actually affects the court's decision by determining the size and profitability of its operations. This inference is unwarranted for two reasons. First, it is not the size of the polluter, or even its profitability, that matters, but rather the cost of abatement.

However, this view misses a key feature of the law of remedies that may work to the advantage of polluters: the internal hierarchy between damages and injunctions. A basic maxim in the law of remedies states that injunctive relief is a residual remedy to which courts should resort only when damages cannot adequately redress the plaintiff's harm. As the Supreme Court stated in *Bowen v. Mass*.,[191] "even though a plaintiff often prefers a judicial order preventing a harmful act or omission before it occurs, damages after the fact are considered an 'adequate remedy' in all but the most extraordinary cases."[192]

In other words, the judicial determination of remedies involves a two step process. First, the court must decide whether monetary damages adequately redress the wrong. Second, if the court decides that damages are inappropriate in a particular case, it will award the plaintiff an injunction. To see how all this help polluters,[193] recall our analysis of buyout offers. As we explained, the fear of being left at the back end could spur a substantial percentage of the residents of small communities to accept a buyout, even if the proposed price is below

See A. Mitchell Polinsky, AN INTRODUCTION TO LAW AND ECONOMICS 15-26 (2nd ed. 1989). The misplaced focus on size, we suspect, stems from the notoriety of the *Boomer* decision where the court compared the value of the cement plant's operation to the harm to the residents. *Boomer,* however, is unrepresentative. In Boomer, unlike in other cases, the polluter allegedly had no other way to abate other then to shut down the plant. This is not usually the story in most other cases, as our analysis of Cheshire demonstrates. *See* discussion in Part III.A.2, *supra.* Second, the polluter's size and profitability are determined by the forces of supply and demand. In other words, the market—not the probability of an injunction in a future lawsuit—determines polluters' size and profitability.

[191] 487 U.S. 879 (1988) (Scalia dissenting).

[192] *Id.* at 925. Various state courts have historically treated injunctions in a similar manner. *See, e.g.,* Amdor v. Cooney, 43 N.W.2d 136, 140 (Iowa 1950) ("[I]njunctions are granted sparingly, with caution and only in clear cases."); *Aldridge v. Saxey*, 409 P.2d 184, 189 (Or. 1965) ("It is everywhere held that equity jurisdiction to enjoin an alleged nuisance is exercised sparingly and cautiously."); Cline v. Franklin Pork, Inc., 361 N.W.2d 566, 568 (Neb. 1985) ("An injunction against a nuisance is an extraordinary remedial process which is granted not as a matter of right but in the exercise of the sound discretion of the court, to be determined on consideration of all the circumstances of each case."). *But see,* Douglas Laycock, *supra* note 20, at vii (suggesting that plaintiffs are usually successful in getting the remedy they seek).

[193] It should be noted that as a general rule, polluters will always favor damages over injunctions. A damage award deprives the residents of compensation for subjective value, and eliminates their ability to holdout. The shift from injunctive relief to damages led Judge Jasen, the dissent in Boomer, to caution that the remedy ordered by the majority gives private parties the power of eminent domain. Boomer, 26 N.Y.2d 219, 230-31.

their subjective value. In our hypothetical we assumed only two groups—high valuation owners and low valuation owners. In reality, of course, there will be a much greater variance in valuations, and it is possible that some owners with particularly high subjective values will refuse to sell.

The reasons for the refusal may be ideological or pragmatic. Some owners may turn the deal down on enmity grounds.[194] Others may find the price offered to them too low. A group that should be especially reluctant to sell is elderly residents. Elderly people who have lived in the same residence for decades may have an especially strong psychological and emotional attachment to their homes, and hence their subjective value may be well in excess of the market value. In addition, the costs of moving and starting afresh in a new place are likely to be inordinately high for members of this group. Yet, elderly owners are not the only ones who may refuse to deal. Residents with a preference for seclusion and isolation, or anti-pollution ideology may elect to remain in their homes even after a community unravels. Finally, some residents, who do not value community as highly as others may prefer to stay and sue the polluter in the hope of obtaining an injunction, which they can later parlay into a better bargain then their peers received. Such persons are willing to incur short run losses in exchange for greater long run gains. Their refusal to deal is strategic, and accordingly they are "holdouts."

Residents from any of these groups, particularly the potential holdouts, present a problem for polluters who are willing to engage in a buyout. For if the residents who cannot go along may sue and get an injunction, the buyout deal no longer makes sense for the polluter. Any individual plaintiff(s) who obtain(s) an injunction can extract the lion's share of the bargaining surplus from the polluter, and ideological holdouts may refuse to sell back the injunction altogether. Why then would polluters engage in buyout negotiations? Or in the context of Cheshire, why did AEP decide to move forward with deal even though a handful of residents announced that they were not going to sell, and indeed, acted as promised?

[194] For discussion of whether policymakers should consider enmity in fashioning legal remedies contrast Ward Farnswarth, *The Economics of Enmity,* 69 U. CHI. L. REV. 211, 211 (2002) (arguing that generally courts should disregard enmity in deciding legal remedies) with Eric Posner, *Law and Emotions,* 89 GEO. L. J. 1977, 2006-10 (2001) (proposing that courts deny property rule protection to plaintiff when her relationship with defendant is tainted by enmity).

The answer to this question, we posit, inheres in the judicial practice of denying injunctive relief when damages provide adequate compensation. This practice means that a favorable response to a buyout offer from the majority of the affected residents dramatically reduces, if not eliminates, the ability of those who refuse to sign on to get an injunction. The fact that the majority of the residents agreed to take money as compensation for the pollution provides ample proof that no injunctive relief is necessary in the case at bar. The higher the percentage of owners who have agreed to sell, the smaller the probability that those who refused will get an injunction.[195] Given that injunctive relief is an equitable remedy that is granted at the discretion of the court, it is highly unlikely that if 99% of the property owners went along with the buyout, the court would empower the remaining 1% to enjoin the operation of the polluter. This is especially true in light of the modern trend to award injunctive relief parsimoniously in nuisance cases.

If we are correct in our analysis, the dependence of injunctions on the adequacy of damages should discourage and in all likelihood eliminate strategic holdouts. Residents who decide not to sell, and sue instead, may in the end get the same amount of money their former neighbors received by agreeing to the buyout. But the recalcitrant neighbors will get it at a much higher cost; they will have incurred the cost of litigation. This means that the buyout price set by the polluter will, with some minor adjustments, become the "damage award" the polluter will end up paying to all affected residents—those who sell immediately and those who take their grievance to court. Thus, by making a buyout offer that will be acceptable to the average property owner, the polluter effectively purchases "immunity" against holdouts—and litigation in general. The buyout mechanism allows the polluter to set the parameters of the legal relationship with the residents, as well as to exert control over the judicial election of

[195] This might explain the 50% requirement posted by AEP. Acceptance by a simple majority is probably the bare minimum necessary for a showing that a legal remedy is adequate under the circumstances. A lower acceptance rate would therefore be meaningless for AEP, and thus it would have been better for AEP not to deal at all. The simple majority requirement therefore served as a safety valve that enabled AEP to annul the bargain if it failed to achieve sufficient support among the Cheshire residents.

remedies. Or put differently, the use of buyout mechanisms enables polluters to "endogenize" injunctions.[196]

The upshot of our discussion is that buyout mechanisms may clear the way to private takings. Formally, private property may be taken without the owner's consent only by the government, and only in exchange for the payment of just compensation.[197] Private actors are not formally endowed with a similar power; as against these "takers," an owner's fee simple interest is protected by a property rule. In practice, however, private actors may force property owners to sell their property for a price lower than their own private valuations by making a buyout offer to the members of the relevant community. As we showed, the risk of being left at the "back-end" without community amenities, and without the interpersonal networks, is likely to force property owners to surrender their interests in exchange for the price offered by the private taker. As long as the price offered by the polluter is above market value, a majority of the owners in the relevant community will agree to tender their titles. As we explained, moreover, the majority's decision to accept the buyout offer should dramatically diminish the minority's probability of securing injunctive relief against the polluter. The inter-dependence among community members is not merely practical, but also legal, and it acts to deprive certain property owners of the power to sell at the price of their choice, changing the nature of the protection of their right from property to a liability rule.

This insight offers an important refinement for the theory of holdouts. The term "holdout" connotes a strategic motivation. A holdout's refusal to deal is grounded in the desire to extract as high economic rents as possible from the other party to the transaction. To succeed, a holdout must be in possession of a unique asset, and must be able to determine the price of that asset. In other words, holdouts critically depend on property rule protection. Classic holdout settings involve indivisible projects, such as the construction of a new interstate highway for which the Federal government must acquire all the properties along the planned course. In such a case, any single owner can block the entire project by refusing to sell. Nuisance cases are different since the nuisance-causer does not have to acquire title to

[196] By "endogenizing the injunction," we mean influence the probability of injunctive relief being granted. The probability does not drop to zero, however; courts still retain equitable discretion over the decision.

[197] U.S. Constitution, Amendment V.

all affected properties to continue its operations. Once the threat of an injunction has been removed, a polluter can pay damages and continue to carry out its activities. Absent the ability to get an injunction, pollution victims cannot holdout.

At present, however, the term holdout is attached to any person who refuses to deal for whatever reason. This colloquial use fails to capture the very essence of the phenomenon, a strategic attempt to extract rents. In Cheshire, for instance, a handful of older residents rejected AEP's buyout offer for a various subjective reasons. Some of these residents place a very high subjective value on their continued stay in Cheshire. Their decision to stay in not motivated by a desire to do better than their neighbors who chose to sell. In fact, it is possible that some of them would not have sold for any price. It is rumored that Jay Hall, who lives just outside of Cheshire, but has property within the town limits, stated to several people that "AEP just can't pay enough to buy me out."

These residents' refusal to sell was not accompanied by any effort to extract a better offer from the buyer. And, indeed, our analysis of the law of remedies suggests that they would fail to enjoin AEP even if they were to try. Therefore, actors with very high subjective valuations are not "holdouts" and should not be treated as such. Instead, we propose that owners who attach high idiosyncratic value be termed "hold-ins." Whether the law should treat "holdouts" and hold-ins in the same way is a difficult question we leave for another opportunity.

The categories of holdouts and holdings can over time shade into one another. The stories of the two resident-owners who decided to stay provide an interesting illustration of this possibility. Beula "Boots" Hern, an 82 year old widow, lived in a Cheshire all her life. Neighbors describe Ms. Hern as a feisty, even "cantankerous" person, who was at the forefront of the campaign against AEP.[198] Thus, her neighbors were surprised at her decision not to sell.[199] But on closer inspection, this decision may not at all be surprising. It seems that the struggle against AEP gave Ms. Hern a unique personal satisfaction; it clearly got her substantial attention from the media. It is possible that the campaign against AEP's pollution has become Ms. Hern's "raison d'etre," an experience she values extremely highly.

[198] Hammond interview, *supra* note 43.
[199] *Id*.

The other resident-owner who decided not to sell spoke to us on condition of anonymity. He grew up in Cheshire as a "Huck Finn on the river." He later left to Cheshire, but his life-long dream was to return to his boyhood home, and build a house on the bank of the Ohio river. After retiring, he returned to Cheshire, and now lives there with his wife in a mobile home. The buyout put their plan to build a new house on hold. The couple's attitude to AEP was clearly marked by indignation. The husband told us in no unconditional terms: "For a public company to buy a town like that should be illegal." He was upset with AEP for not being a better neighbor, and expressed strong hope that the Cheshire community would one day be revived, possibly with AEP's help. The couple decided to stay in Cheshire and see how AEP behaves in the future.

The husband told us that although they are not planning on leaving, they do not categorically rule out the option of selling in the future. However, even an offer "three and a half times" as high as the one presented to them, will not send them packing. We believe that the couple's initial decision to stay was not strategic. But the thought of selling, if the price is right, rests somewhere in the back of their minds. It may have been there all along, or developed through time in response to the changed circumstances around them, and the actions of their neighbors. Yet, the partly ideological, partly strategic, motivation makes it impossible to classify them as either pure holdouts or pure holdings. At the end of the day, the two categories are not mutually exclusive; rather they are at the two extremes of a psychological continuum.

VI. IMPLICATIONS FOR THE THEORY OF BARGAINING WITH GROUPS

We continue our normative discussion by reexamining the theory of collective action problems as applied to bargaining with groups. Our analysis so far has focused on the various acquisition strategies available to polluters in situations involving multiple victims. Yet, in Cheshire, it was the residents who initiated the buyout; the polluter stepped in at their invitation.[200] This fact is at

[200] By "initiated," we do not necessarily mean "made an offer to sell." It is unclear who first came up with the buyout proposal. But it is clear that the residents' extensive efforts (lobbying public officials, complaining to AEP, attracting media attention to the town's plight, and intervening in the plant's decisions, e.g., about which abatement technologies to deploy) were instrumental in setting the stage for the buyout.

odds with the theory of collective action. Suppose a group of 100 people could secure a benefit of $100,000, if some or all the members would pay $20,000. The group cannot compel any member to contribute, and must rely exclusively on goodwill. Finally, the benefit of the contributions would flow to all members of the group regardless of their actions. In this situation, as Olson famously showed, self-interested individuals will choose not to contribute to the group offer, hoping that others will bear the cost necessary to produce the benefit.[201] Of course, when everyone behaves in this fashion, the benefit will not be produced, and all group members will be worse off.

The Cheshire buyout deal seemed to share some of the underlying characteristics of our stylized hypothetical. While some residents stood to gain from selling out to AEP, each of them had an inherent incentive to maximize her expected payoff by not taking action, and letting other interested members bear the cost of securing an offer. A common way to overcome the collective action problem, one that seems to have occurred in Cheshire, is for some group members to assume the role of leaders and spearhead the effort to coordinate the group.[202] Indeed, certain residents, presumably those who stood to gain the most from selling, led the negotiations with AEP.[203]

The emergence of entrepreneurs, or group leaders, takes care of the collective action problem but only at the cost of introducing an agency problem.[204] The fear is, of course, that the entrepreneurs will favor their narrow self-interest over the collective interest of the group. Precisely such allegations arose in Cheshire.[205] The

[201] Mancur Olson, Jr., THE LOGIC OF COLLECTIVE ACTION AND THE THEORY OF GROUPS (1965).

[202] "The presence of a leader or entrepreneur, who articulates different ways of organizing to improve joint outcomes, is frequently an important initial stimulus [to collective action]." Ostrom, *supra* note 140 at 149.

[203] Ron Hammond, Jennifer and Steve Harrison. However, the fact that these residents has a more at stake if the deal fail through does not explain why they volunteered to coordinate the deal. They too could increase their personal payoffs by letting others shoulder the cost of coordinating the buyout. In other words, their behavior is inconsistent with the theory of collective action, at least under assumptions of strict rationality.

[204] *See e.g.* Abraham Bell & Gideon Parchomovsky, *Of Property and Anti-Property: The Perverse Virtues of Transaction Cost and Anticommons* (unpublished manuscript) (on file with authors).

[205] Anonymous Interview, *supra* note 183.

compensation formula negotiated with AEP was predicated on historic tax assessments, and consequently, it apparently favored new comers to the community (or those who had made recent improvements to their property, and thus had it reappraised) over older residents whose property had not been on the market for many years. Coincidentally or not, the residents' representatives who coordinated the buyout, were among the relative newcomers to the community. So in that sense, the theoretic prediction was vindicated by reality.

However, the Cheshire case offers a different theoretic novelty. The cooperation between those residents who favored a sale and AEP points to an alternative solution to the collective action problem in bargaining settings. When coordination costs are asymmetrically distributed between the buyer and the seller, as in the case of a single buyer and multiple sellers, it makes sense for the *buyer* to shoulder the costs of coordinating the transaction. This principle may be termed the "least cost coordinator,"[206] in cases like Cheshire, it dictates that the polluter should always be the one initiating the buyout offer. After all the cost of coordinating a buyout, like all other transaction costs, are a societal deadweight loss, and efficiency requires that such costs be minimized.

The polluter, however, may have strategic reasons not to move first. First among these is the problem of asymmetric information. Although the polluter may be interested in buying, she may not know what the offer amount should be. Recall that the polluter is not just buying the affected properties, the prices of which are readily accessible, but also immunity from future lawsuits. The residents, on the other hand, have better access to such private information. Second, the polluter may have reputational reasons not to initiate. Making a buyout offer may signal culpability on the part of the polluter, or at the very least, a fear of legal liability. This concern is exacerbated by the informational disadvantage of the polluter. For if the polluter's offer is too low and the residents reject it, the making of the offer by itself might reinforce the belief of the residents that they have been wronged and prod them to sue. In short, the polluter, unlike the residents, faces a first mover disadvantage.[207] It is interesting to

[206] See generally Guido Calabresi, THE COSTS OF ACCIDENTS 135-40 (1970) (introducing and discussing the "cheapest" or "least" cost avoider principle).

[207] See e.g., Daniel J. Seidmann & Alex Stein, *The Right to Silence Helps the Innocent: A Game-Theoretic Analysis of the Fifth Amendment Privilege*, 114 Harv.

note that in the context of Cheshire, AEP adamantly insisted that its behavior was not motivated by fear of legal liability, but rather by the desire to be a good and cooperative neighbor.[208] Finally, the polluter may prefer not to initiate in the hope that the collective action problems affecting the victims will prevent them from taking legal action against it. Again, the Cheshire case is illustrative. Although, the residents suffered from varying degrees of pollution for several years, to the best of our knowledge, only one resident attempted to bring legal action against AEP. That case was ultimately settled.[209]

The strategic problems on the two sides of the ledger may thwart a mutually beneficial bargain between the polluter and the victims, and lock the parties into a stalemate. For the reasons explained, the polluter might be reluctant to initiate an offer to buy, and the residents' attempt to coordinate an offer to sell may run aground, or not even take off, due to collective action problems. How can this potential stalemate be avoided? One effective solution is cooperation between some of the residents and the polluter. Specifically, the residents who are eager to leave can promote their cause by enlisting the help of the polluter. Instead of incurring the high cost of coordinating their neighbors, any member of residents group can approach the polluter with an offer to buy her out individually. While this course of action does not bind the other members of the group, it facilitates a collective deal in two ways. First, it provides the polluter with valuable information about the asking price of the residents. Granted, there may be variance among the asking prices of different residents. Yet, knowing a few of them can help the polluter calculate his potential payout, and devise a buyout plan acceptable to the residents. It is reasonable to assume that members of close-knit communities share information among themselves about the consideration each of them wish to get in exchange for his or her departure. Hence, the polluter can infer that the amounts requested by individual members bear some relationship to the amounts sought by other community members. Second, individual offers to sell give the polluter an opportunity to portray itself as a "white knight," who charitably comes to the aid of the

L. Rev. 430, 447 & n. 56 (2000) (explaining a suspect's first move disadvantage in police interrogations).

[208] See, e.g., Teather, *supra*. n. 42.

[209] Harrison I, *supra* note 1.

community residents. Seizing on the opportunity and acting "gallantly" is likely to help the polluter get favorable media coverage, and thus enhance its reputation.

Doubtless, from the vantage-point of the residents the separate action has an obvious downside: it reduces their bargaining power. As is clear from the employment context, collective bargaining leads to better terms. This is especially true in pollution cases where the polluter is essentially a monopsony. Once a community is hit with pollution, it loses its appeal to potential market buyers, and the only deal the residents can potentially secure is to sell to the polluter. In principle, concerted action would have likely secured the residents a larger part of the bargaining surplus. However, given the problem of collective action, it should be expected that some members of the residents group will choose to deal will the polluter on an individual basis. Indeed, when coordination costs are very high, this may be the only viable way to coordinate buyouts.

VII. EXTENSION: IMPLICATIONS FOR TAKINGS POLICY

We conclude the analysis by extending the normative implications of Cheshire to the law and theory of takings. Although Cheshire is a private taking case, it has dramatic implications for the law and policy of eminent domain. Government exercises of eminent domain far outnumber private takings, and accordingly their effect on private property owners and communities is much greater.

Furthermore, while private takers should pay above market compensation to succeed in a buyout offer, the government must only pay "fair market" value. As a result, government exercises of the eminent domain power erode private property rights much more dramatically than do private takings. Therefore, we deem it imperative to discuss the lessons of Cheshire for eminent domain theory and practice.

The power of eminent domain is probably the most discussed subject in the whole law of property. The ample writing on the topic is due in part to the fact that it constitutes an important intersection between property and constitutional law, as well as to the vagueness of the Supreme Court's takings jurisprudence.[210] The scholarly

[210] Compare, e.g., *Miller v. Schoene*, 276 U.S. 272 (1928) (finding no taking where a state regulation required owners to cut down red cedar trees infected with a virus that could kill apple trees) with *Dep't of Agric. & Consumer Servs. v. Mid-Florida*

discussion of eminent domain may be divided into three broad categories. The first category focuses on the question how we should taxonomize takings.[211] The second addresses the constitutional question of which government acts require compensation.[212] The third concerns itself with the question of what "just compensation" means.[213] Our investigation of community externalities offers important contributions to the first and third categories of takings scholarship.

Growers, Inc. 521 So. 2d 101 (Fla.), cert. denied, 488 U.S. 870 (1988) (holding full and just compensation required when state, pursuant to its police power, destroyed healthy trees). Compare also *Mahon*, 260 U.S. 393 (elimination of mining rights is a taking) with *Keystone Bituminous Coal Ass'n v. DeBenedictis,* 480 U.S. 470 (1987) (elimination of mining rights is not a taking). See, e.g., Bruce A. Ackerman, PRIVATE PROPERTY AND THE CONSTITUTION 3 (1977) (takings jurisprudence is "set of confused judicial responses"); Andrea L. Peterson, The Takings Clause: In Search of Underlying Principles Part I – A Critique of Current Takings Clause Doctrine, 77 CAL. L. REV. 1301, 1304 (1989) ("[I]t is difficult to imagine a body of case law in greater doctrinal and conceptual disarray."); Carol M. Rose, Mahon Reconstructed: Why the Takings Issue is Still a Muddle, 57 S. Cal. L. Rev. 561 (1984); Raymond R. Coletta, Reciprocity of Advantage and Regulatory Takings: Toward a New Theory of Takings Jurisprudence, 40 AM. U. L. REV. 297, 299-300 (1990) (Takings jurisprudence is a "chameleon of ad hoc decisions that has bred considerable confusion…"); Gideon Kanner, Hunting the Snark, Not the Quark: Has the Supreme Court Been Competent in Its Effort to Formulate Coherent Regulatory Takings Law?, 30 URB. LAW 302, 308 (1998) ("The incoherence of the U.S. Supreme Court's output in this field has by now been demonstrated time and again by practitioners and academic commentators ad nauseam, and I refuse to add to the ongoing gratuitous slaughter of trees for the paper consumed in this frustrating and inherently pointless enterprise.").

[211] See e.g. Abraham Bell & Gideon Parchomovsky, Takings Reassessed, *supra* note 23, at 280-81 (2001) (discussing different types of takings); Givings, 111 YALE L. J. 547 (2001) (providing a taxonomy of givings).

[212] See e.g. Joseph L. Sax, Takings and the Police Power, 74 YALE L. J. 36, 62-63 (1964) (requiring compensation whenever the government acts like an enterprise, such as when it uses the property to provide goods or services, but not when it arbitrates private disputes, for instance, by preventing noxious uses); Frank I. Michelman, Property, Utility, and Fairness: Comments On the Ethical Foundations of "Just Compensation" Law, 80 HARV. L. REV. 1165, 1215 (1967) (proposing that compensation for regulatory takings be paid when demoralization costs exceed settlement costs): Richard A. Epstein, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN (1985) (arguing that any government action that diminishes property values should be considered a taking for which compensation is constitutionally mandated); and William A. Fischel, REGULATORY TAKINGS: LAW, ECONOMICS AND POLITICS 351-53 (1995) (arguing that compensable takings should be found where regulations diverge from social norms).

[213] See e.g., Hanoch Dagan, *Takings and Distributive Justice*, 85 Va. L. Rev. 741 (1999) (advocating a progressive compensation system that would award greater compensation to poor condemnees relative to affluent ones); Abraham Bell, Not Just Compensation (unpublished manuscript on file with authors) (arguing for downward adjustment of compensation awards to combat moral hazard).

A. A New Takings Taxonomy

At present, the only accepted method of classifying takings is functional, based on their effect on property. The Supreme Court recognized two prototypes of takings, physical and regulatory.[214] Academic commentators, however, observed a third prototype, derivative takings.[215] In mapping the terrain of takings, Bell and Parchomovsky explained the three prototypes as follows:

> A physical taking occurs when the state seizes a property interest in order to put it to public use. In a regulatory taking, the state does not seize the property interest, but regulates its use in a manner that unduly diminishes property values. A derivative taking is present whenever a taking diminishes the value of surrounding property. Derivative takings are a hybrid of their more familiar close cousins. They resemble regulatory takings in that they reduce the value of property without physically appropriating it. Yet, they are distinct from regulatory takings in that they may arise as the result of a physical taking. And, unlike its cousins, the derivative taking never appears alone; it must always be preceded by a physical or a regulatory taking.[216]

While the existing typology of takings helps illuminate which kinds of government actions may give rise to a duty to compensate, it fails to take account of the number of properties affected by government action. Notwithstanding scholarly acknowledgement of the ripple effects of traditional takings,[217] and Bell & Parchomovsky's concept of derivative takings,[218] the judicial prism remains restricted

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[214] *PA Coal v. Mahon*, 260 U.S. 393 (1922) (recognizing the possibility that regulation may constitute a taking under the Fifth Amendment). For a historic review of the Takings Clause see William Michael Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 COLUM. L. REV. 782 (1995).

[215] Bell & Parchomovsky, Takings Reassessed, *supra* note 23, at 280.

[216] *Id.* at 280-81 (footnotes omitted).

[217] See generally, Donald G. Hagman & Dean J. Misczynski, eds., WINDFALLS FOR WIPEOUTS: LAND VALUE CAPTURE AND COMPENSATION (1978).

Bell & Parchomovsky, *Takings Reassessed, supra* note 23.

to property directly targeted by the government actions. Adjacent property that is indirectly affected, and whose owners stand to suffer considerable diminution in value fall outside the purview of the Takings Clause of the Fifth Amendment.[219] Use, not value, is the *sine qua non* of compensation, so without government restriction on the owner's use of the property, loss of value, no matter how great, will not give rise to compensation. Furthermore, in the case of property owners who qualify for compensation under this restrictive test, the Supreme Court has interpreted the constitutional requirement of just compensation to mean payment of fair market value.[220] While academic commentators proposed other compensation measures based on various criteria,[221] they too have failed to pay heed to the important implications of the number of properties affected by the government action to takings doctrine.

We argue that the incompleteness of current theory and doctrine is likely to lead to harsh consequences for property owners in many small places characterized by community externalities. Consider the following example. Suppose that in order to pave a new interstate highway, the government must condemn 40% of the properties in Amityville, a small 300-person community. As is the case in many small places, Amityville is characterized by strong interpersonal ties. Furthermore, for the local amenities to be sustained, all current properties must remain residential. The interpersonal ties, although strong, are not fully captured by the market value of the properties. How will the execution of the highway plan affect Amityville? The owners of the condemned properties will receive compensation in the amount of the market value of their properties. In all likelihood, this

[219] See e.g., *United States v. Causby*, 328 U.S. 256 (1946) (holding that only those property owners whose houses lay directly below the air routes had a right to compensation under the Fifth Amendment)

[220] See e.g., *Olson v. United States,* 292 U.S. 246, 255 (1934) (stating that just compensation "does not exceed market value fairly determined*"); U.S. v. Miller,* 317 U.S. 369, 374 (1943) (explaining that for practical reasons "courts early adopted and have retained the concept of fair market value" in determining takings compensation); *Kimball Laundry Co. v. United States*, 338 U.S. 1, 5, 69 (1949) ("loss to the owner of nontransferable values deriving from his unique need for property or idiosyncratic attachment to it, like loss due to an exercise of the police power, is properly treated as part of the burden of common citizenship.").

[221] See e.g., Laura H. Burney, *Just Compensation and the Condemnation of Future Interests: Empirical Evidence of the Failure of Market Value* 1989 B.Y.U. L. REV. 789, 791 (demonstrating "the general inappropriateness of strictly adhering to any one predetermined standard [of compensation]."); Dagan, *supra* note 213.

measure will fall short of the subjective value the condemnees assigned to their properties, because it would exclude any value placed on the community. Despite this undercompensation, such residents would nevertheless fare better than their neighbors whose properties were not taken. Those left behind will find themselves in a non-sustainable community, bereft of valuable personal friendships, and living near a new interstate highway that is likely to further devalue their properties. And they will receive no compensation whatsoever.

The gross under-compensation suffered by the residents of Amityville is disconcerting on both fairness and efficiency grounds. The outcome is unfair because it violates the principle enunciated by the Supreme Court in *Armstrong v. United States* that it is wrong to "forc[e] some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[222] The outcome is also inefficient because it enables the government to externalize a substantial part of the cost of its policies on private property owners, thereby leading to inaccurate assessments of the cost-effectiveness and desirability of government policies. In close cases, the under-compensation may result in inefficient exercises of the eminent domain power.

To design a fairer and a more efficient takings regime for cases involving community externalities, it is necessary to introduce a quantitative dimension to the existing conceptual framework for analyzing takings. When community externalities exist, the main focus of the judicial inquiry should not be so much the characterization of the government action as a physical, regulatory, or derivative taking, but rather the effect of the action on the relevant community.[223] To help courts accomplish this task, we propose dividing the universe of takings cases into three novel conceptual categories: Isolated takings, tippings, and clearings.

The first category, isolated takings, consists of discrete exercises of eminent domain power. A typical example of a case falling in this

[222] 364 U.S. 40, 49 (1960).

[223] Our analysis focuses on takings of a fee simple interest to the entire property. Of course, the government may also exercise its power to take a lesser interest, such as, a servitude, or to appropriate a part of the property. In such cases, the effect on the community should be less drastic, and one would expect that the community would remain vital and functional. However, there should be no hard and fast rules, and in each case, courts should carefully examine the potential effect of the government action on the community.

category would be the condemnation of a single parcel for the purpose of building a school. Instances of isolated takings are relatively rare, however. Typically, government actions in the area of land use control involve a large number of parcels, and correspondingly, a large number of owners As a rule, isolated takings will not undermine community externalities, and thus, should have little or no impact on the community at large. Even so, the owner of the taken property is likely to be undercompensated by an award of fair market value since it would not compensate her for the loss of valuable interpersonal ties.[224]

The second category, Tippings,[225] is more common, and thus, presents a far greater challenge. This category encompasses all cases in which the government condemns multiple properties in a community, causing provision of community amenities to become unsustainable and disrupting community life. By analogy to Schelling's model of racial segregation, the forced exit of a sufficiently large subset of property owners will likely cause the destruction of the entire community. Tippings therefore affect those whose property was taken, and those whose legal interest in the property was not affected. The current compensation regime adequately compensates neither group. The payment of fair market value to owners in the first category does not compensate them for the lost value of the community. The remaining owners, whose interest was not taken, will receive no compensation at all.

The third category, Clearings, covers instances in which communities are uprooted in their entirety. In these rare cases, the default rule should be compensation in kind, i.e., provision a substitute location for resettlement. This solution would allow for preservation of community character, albeit in a different place. Of course, this measure should not be coercive, and uninterested property owners should be able to opt out and collect monetary damages.

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[224] It is possible, however, that the condemnee could use the compensation award to purchase a substitute home in the same community. This option is available to the condemnee precisely because the community externality is not fully reflected in property prices.

[225] *See* THOMAS C. SCHELLING, MICROMOTIVES AND MACROBEHAVIOR 140-55 (1978); THOMAS C. SCHELLING A PROCESS OF RESIDENTIAL SEGREGATION: NEIGHBORHOOD TIPPING, IN RACIAL DISCRIMINATION IN ECONOMIC LIFE (A. Pascal ed., 1972); Thomas C. Schelling, *Dynamic Models of Segregation*, 1 J. MATHEMATICAL SOC. 143, 167-71 (1971).

The best-known case of a clearing is *Poletown v. City of Detroit*.[226] There, the city government exercised its eminent domain power to condemn all the properties in the Poletown neighborhood to allow General Motors to build a new automobile manufacturing facility. On the whole, the city of Detroit condemned 1,400 homes, 144 businesses and 16 churches, many of which were turned into landscaped lawns, ponds and parking lots surrounding the G.M. plant.[227] Jeanie Wylie's poignant, first-hand, account of the condemnation process and its effects on the lives of Poletown's residents amply demonstrates the devastating effects of the clearing on the affected property owners. Wylie reported that in the aftermath of the taking, many of the residents were unable to resume their normal lives. The community served as their compass for daily life, and after its destruction, they lost their sense of direction.[228]

The story of Poletown is by no means an isolated one. Urban renewal and redevelopment plans often replicate the outcome in Poletown. For example, between 1946 and 1953, the urban renewal projects executed in New York under the supervision of Robert Moses "changed the face of whole neighborhoods."[229] According to the City Planning Commission estimates these projects led to the uprooting of over 250,000 people, and the condemnation of hundreds of apartment buildings, stores, factories.[230] Similar renewal projects, albeit on a somewhat small scale, were carried in many other American cities.[231] It is highly likely that in many of those cases

[226] 304 N.W.2d 455 (Mich. 1981).

[227] *See* Jeanie Wylie, POLETOWN: COMMUNITY BETRAYED 51-52 (1989).

[228] According to Wylie, several residents died shortly after they had been forced to leave Poletown. Id. at 194-98. She also suggested that the priest of the Immaculate Conception church that served the Poletown community "died of a broken heart." *Id.* at 198.

[229] Wendell E. Pritchett, *The "Public Menace" of Blight: Urban Renewal and the Private Uses of Eminent Domain*, 21 YALE L. & POL'Y REV. 1, 37 (2003).

[230] *Id.* citing Robert A. Caro, THE POWER BROKER: ROBERT MOSES AND THE FALL OF NEW YORK 965-68 (1974).

[231] See e.g., *Berman v. Parker*, 348 U.S. 26, 34-35 (1954) (approving the constitutionality of the urban redevelopment plan of Southwest Washington). Cf. Denis J. Brion, *The Meaning of the City: Urban Redevelopment and the Loss of Community,* 25 IND. L. REV. 685, 687-702 (1991) (discussing the harsh effect the Redevelopment Act had on individual residents in Southwest Washington). For a historic review of urban development plans in the U.S., see Pritchett, *id.* at 31-47.

property owners suffered severe losses that were not adequately compensated.[232]

B. Just Compensation

To take account of the full effect of eminent domain exercises on small communities, courts ought to do two things: First, courts ought to broaden the focus of the compensation inquiry beyond the lots directly affected. Second, they must recognize that property owners stand to suffer a loss well in excess of fair market value as a result of government takings, and compensate them at a premium.[233] At first blush, compensation at a premium may seem like a pretty radical idea; it is not. Compensation at a premium used to be the rule

[232] See e.g., Michael Heller, *The Boundaries of Private Property*, 108 YALE L. J. 1163, 1221 n. 284 (1999) (observing that "[t]here was a substantial question whether the switch to factory use [in Poletown] improved overall utility because the fair market value system of compensation misses the subjective and community values destroyed by bundling.").

Urban renewal and redevelopment present an interesting challenge for our proposal since they sometimes (depending on their scope) fall under the category of tippings. Although by tipping communities out such measures, no doubt, devastate communities and neighborhoods, they may in the long run, have a positive effect on the property values of the remaining members. Thus, the compensation award to the residents whose property was not condemned should be adjusted to reflect this fact. Yet it should be remembered that the increase in property values does not happen overnight; nor is it a certain outcome. It often takes renewal plans years to be completed, and at the expected increase may not materialize. The case of *Levine v. City of New Haven*, 30 Conn. Supp. 13, 294 A.2d 644 (1972) is illustrative. There, the plaintiff brought an inverse condemnation suit after his property had been included in a redevelopment area but not taken for nine years. As a result, "plaintiff's property suffered from the normal consequences of the planning of a redevelopment area in that the general area suffered depreciation in value, vandalism and loss of tenants, among other deteriorating factors." Id. at 645.

[233] It should be noted that neither of these changes necessarily requires legislative intervention, but rather a change in the judicial approach. Nothing in the language of the constitution dictates that only directly affected property be entitled to takings compensation. In fact, in *PA Coal v. Mahon*, 260 U.S. 393 (1922), the first case to recognize the possibility of a regulatory taking, the Court predicated its decision on the principle of undue diminution in value. If undue diminution in value is the touchstone of compensation, there is no logical reason to limit its application only to some lots. Likewise, the Takings Clause does not mention fair market value as the right compensation measure. This measure was subsequently adopted by the courts, primarily for practical reasons. See *United States v. 564.54 Acres of Land*, 441 U.S. 506, 511 (1979) ("Because of serious practical difficulties in assessing the worth an individual places on particular property at a give time, we have recognized the need for a relatively objective working rule…"). Below, we show that fear of difficult assessment problems does not necessarily apply to community value, and how loss of community compensation may be administered at relatively low cost. See discussion in Part VII, *infra.*

in the United Kingdom,[234] and still is the rule in Canada.[235] In both cases the increased award was intended to soften the negative impact of the taking, irrespective of any community effects.[236] A premium was also authorized in the New Hampshire Mill Act at issue in the late Nineteenth century case of *Head v. Amoskeag*.[237]

But what should the community premium be? As a starting point, the community premium might be set at 20 percent above market value, and in appropriate cases may be even higher. Perforce, the 20 percent benchmark we propose is somewhat arbitrary; the added value of community to individuals cannot be easily measured. Yet, this is hardly a reason not to take it into account at all. We, therefore, chose to propose a rather conservative premium, and grant courts the discretion to revise it upward or downward on a case-by-case basis. Implementation of the proposed compensation regime should proceed based on the distinction we introduced among isolated takings, tippings, clearings.

Since isolated takings do not affect the fabric of the community, the compensation inquiry should focus exclusively on the individual condemnee or condemnees. In this case, courts should consider compensating the condemnee at a premium to reflect the special harm she suffered.[238] However, awarding a heightened compensation award should not be automatic; the court should look at the availability of substitute property in the relevant community. When similar property is available, an award of fair market value should suffice since the condemnee can use the compensation award to purchase a new home in the same community.

In cases of tippings, the focus of the inquiry should be expanded to cover property owners who were not directly affected by the government action. Compensation should be limited to owners whose

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[234] Dukeminier & Krier, *supra* note 84, at 1115 n. 14. In the United States, Ellickson proposed award of bonuses to compensate for subjective loss. See Robert C. Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681, 736-37 (1973).

[235] See Dukeminier & Krier, *id*. at 1115 n. 14.

[236] *Id. id*.

[237] 113 U.S. 9 (1885). The challenged statute required compensation—at a 50 percent premium over fair market value—for owners of property that was flooded by the damming of rivers in order to operate mills.

[238] *See* Brion, *supra* note 231, at 734 ("[i]ncorporating the consideration of communality into the compensation issue would require an accounting of the value that the community brought to the expropriated owners.").

property was taken; rather, it should extend to the remaining owners. The actual amount paid should vary, though. Owners whose property was condemned should be entitled to fair market value, and a community premium. The remaining owners whose property was not condemned should receive the community premium, but not fair market value.[239]

Finally, in cases of clearings that clearly affect all members of the relevant community, we propose a system of compensation in kind. To avoid the difficulty of accurately estimating the community premium, the government will be well advised to offer all community members a substitute site where the community could resettle and start afresh.[240] Indeed, the government used a similar remedy in the case of Valmeyer, Illinois. After the town was repeatedly damaged by floods, the government provided substantial funds to relocate the entire town to higher ground a mile from its previous site.[241]

Of course, community members should not be forced to relocate to a certain site—such coercion would undermine the goal of the project. Members who prefer to continue their lives elsewhere should be allowed to collect damages and go their separate way. The damage award in such case should be fair market value plus a community premium.

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[239] We are aware that insofar as the loss of community is concerned, the harm suffered by the condemnees is not identical to that of the remaining community members. The latter group may have incurred a greater or lesser loss depending on how the government is going to use the newly "acquired" property. For instance, the construction of a highway may further reduce the property values of the remaining owners. Yet, for simplicity's sake, we advocate, as a default rule, a uniform compensation premium. In appropriate cases, courts should have the discretion to differentiate the premium paid to various property owners.

[240] For discussion of "in kind" compensation, *see* Lee Anne Fennell, *Hard Bargains and Real Steals: Land Use Exactions Revisited,* 86 IOWA L. REV. 1 (2000).

[241] Sadly, it must be noted that although many residents did move, much of the community spirit seems to have been lost in the process.

> Some Old Valmeyer residents moved to the new subdivision, but many left the area entirely. Younger families from elsewhere, attracted by the school, have moved in, but they shop and play somewhere else. About 600 people live there. In the meantime, the businesses that remained in Old Valmeyer have shut down or moved. The community's cohesion, and any sense of a place with a history, went out with the flood. "I hardly know anybody going down the road," said Bernice Meadors, who moved her tavern, the Corner Pub, from the old town to the new town after the flood. "I thought the people would come back. But those people who live up here, they don't come from here. The heart is gone."

Kilborn, *supra* note 158.

Our proposed compensation regime is summarized in Table 3.

Table 3: Current and Proposed Rules for Takings Compensation

Type of Taking	Current Compensation	Proposed Remedy	
		Condemnee	Others Affected
Isolated	Fair Market Value (FMV)	FMV + Premium to compensate for loss of community	No Compensation
Tipping	FMV for Condemnee, 0 for all others	FMV + Premium for all taken properties	Premium Only
Clearing	FMV for all properties	Resettlement of entire community, w/option of compensation at FMV + Premium	Resettlement of entire community, w/option of compensation at FMV + Premium

It is important to note that the proposed compensation regime is by no means limited to small communities in rural areas. The same principles should be extended to cohesive communities in larger urban areas. This does not mean, however, that a community premium should be incorporated in every compensation scheme. One important factor to which courts should look in determining eligibility is the turnover rate in the community.[242] Other factors to be taken into account are the existence of community amenities.

One may oppose our proposal on grounds of administrability. As courts,[243] and commentators[244] have noted, fair market value is relatively easy to determine, and any deviation from that standard

[242] An important legal determinant affecting turnover rates in large metropolitan cities is rent control. Indeed, Peggy Radin justified rent control scheme on the grounds that they allow strong interpersonal ties to develop. Margaret Jane Radin, *Market Inalienability*, 100 HARV. L. REV. 1849, 1879 (1987) (arguing that economic analysis should take "account not only the monetary costs to landlords and would-be tenants, but also the decline in well-being of tenants who are forced to lose their homes, [and] break up their communities...").

[243] *See e.g., Miller,* 317 U.S. 369, 374 (1943).

[244] *See e.g.,* David A. Dana & Thomas W. Merrill, Property: Takings 175 (2002) (explaining why fair market value is the accepted compensation standard).

might not be cost effective. While we respect administrability concerns in general, they are not warranted in this case. Adding a set compensation premium should not affect in the least the cost of determining compensation. Insofar as administrability is concerned, there is no difference between awarding market value and 120 percent of that amount. True, in appropriate cases, we give courts the discretion to adjust the community premium. But even so, administrative costs should remain manageable as long as courts award the same premium to all affected property owners.

A related objection is that the value of the community, very much like idiosyncratic value, is unascertainable and should therefore remain noncompensable. This objection has some merit, but it cannot carry the day. That a loss may not be ascertained precisely does not entail a "no compensation" rule. In tort law, for example, the modern trend is to award compensation for emotional harms that accompany physical injuries, despite the fact that emotional harm is idiosyncratic and clearly unascertainable.[245] The community losses accompanying property takings seem analogous to emotional harm in all relevant respect. Furthermore, community losses, unlike purely idiosyncratic ones, are relatively ascertainable. Objective indicia such as turnover rate, and presence of community amenities can aid the court in determining eligibility for community premia. Admittedly, it will be impossible to compensate each property owner for her precise subjective loss. But even imprecise compensation along the lines we propose will advance both fairness and efficiency, relative to the current no compensation regime.

CONCLUSION

That reality is complicated should hardly come as news to any scholar. But the story of Cheshire reveals how truly complex the analysis of real world pollution disputes can be. It is a story of cross-cutting motivations, unresolvable factual questions, and difficult judgments. Take the simplest issue one can imagine–did the residents of Cheshire get a good deal when they sold to AEP? Resolving this question is of course key to any analysis of the economic efficiency of

[245] See Benjamin C. Zipursky & John C.P. Goldberg, *Unrealized Torts*, 88 VA. L. REV. 1625, 1674 & n. 135 (2002) (summarizing the law with respect to emotional harm).

buyouts as a solution to pollution disputes. At first glance, the answer appears to be a pretty clear yes, at least for most people. After all, sellers received a multiple of their property's assessed valuation, which seems fairly generous. The correct answer, if there is one, is much more nuanced than this, however, for several reasons.

First, it's not clear what constitutes the proper baseline against which valuations should be measured. There was essentially no market for properties in Cheshire for at least the past 3 years because of the pollution problem. Hence, while residents may have preferred selling to AEP over staying and living with pollution, it is not clear whether they would have preferred selling to staying *without* pollution. That choice was never really on the table.

Second, this was not a simple land transaction: as part of the deal, residents had to waive their rights to any future health claims against AEP, so what was being sold was a mixture of real property plus liability claims of uncertain value. While there appears to be no evidence that the pollution in Cheshire has had cumulative or long-term health effects on residents, the precise nature of these effects is still anyone's guess. It may be that residents will, in five years, come to regret their signing away of their future claims. The cognitive imperfections and psychological difficulties people face in making calculations about risks (especially latent hazards) have been well documented.[246] Hence, it might well be inappropriate to assume that the residents of Cheshire simply made unbiased predictions of the future costs and benefits of the deal and took the course of action with the largest expected utility. In other words, even those who express satisfaction with the deal may be basing their approval on an optimistic undervaluation of the health claims they signed away.

Third, some people in Cheshire were apparently reluctant sellers who would have preferred to stay if there had been enough others who were also willing to do so. At least some residents feared that, should they decide to remain, they would have been left in a ghost-town, with no neighbors other than a mountainous heap of coal, and with property no one would ever buy. As we argued earlier, the community externality in Cheshire suggests a mechanism by which there some residents might have been coerced into selling. One might

[246] For a summary and analysis of this evidence in a legal setting, see, e.g., Christine Jolls, Cass R. Sunstein and Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998).

raise further questions about the distribution of gains from the sales. Although we do not have hard evidence, it is possible that residents who purchased land more recently, and hence had newer and higher tax assessments, made out better relative to others who had held their land for a longer time. A sense of unfairness (envy?) seems to have gripped some residents.

Finally, there is the nature of the community itself. We must be careful here. Even before the pollution problems began, Cheshire was certainly not a conflict-free Utopia, and we don't want to portray it as such.[247] Neither—undoubtedly—were Valmeyer, Illinois, or the Poletown neighborhood in Detroit, or the Chicago neighborhoods of the 1950's depicted by Alan Ehrenhalt. Communities can be stifling and can breed narrow-mindedness or conformity.[248] Moreover, they can support the wrong kinds of values–as for example, the segregated communities of the Jim Crow South.

While it would be wrong to idealize any community, one conclusion that emerges clearly from the study of what happened in Cheshire is that it would be even more wrong to dismiss communities as nothing more than temporary assemblies of atomistic individuals, places with no significance other than as geographic boundaries on a map. Intangible and fragile as it may be, a sense of community is obviously something of great importance to many residents of small towns and urban neighborhoods. It was precisely this sense of community that was destroyed in the Cheshire buyout. Whether or not "adequate compensation" was paid, it is nevertheless important to take account of the importance of what has been lost.

Consider the fact that the Cheshire buyout attracted attention from newspapers in New York, Chicago, Los Angeles, and Baltimore. Residents were interviewed on Fox Television,[249] and the village's

[247] For example, the Craycraft family, who owned a number of lots in Cheshire, had disputes with neighbors over run-down property and the criminal activity of some of their children. They also allegedly received "telephone calls, things sent in the mail, threats," according to one family member. "The N-word flew. Callers would say to get out of town or we'd be shot," allegedly because the wife of the family's oldest son, Nick, is black. Rita Price, *A Golden Opportunity*, COLUMBUS DISPATCH, July 28, 2002 at C1. While reprehensible, this racial animus can be interpreted as evidence of a hostility to outsiders–and an attendant sense of internal coherence–that is often attributed to small rural communities.

[248] See, e.g., Sherwood Anderson, WINESBURG, OHIO (1919).

[249] *Fox on the Record*, May 13, 2002 (Interview by Greta van Sustern, with Cheshire resident Ron Hammond and AEP spokesman Pat Hemlepp).

pollution problems were documented on ABC News.[250] The town was visited by reporters from France, Germany, and England. What was it about the buyout that made for such a compelling story? We are quite convinced that the press and public did not see the story of Cheshire as the triumph of the Coase Theorem, in which the right to pollute was allocated to the party who valued it most (in this case, the polluter). The public's fascination was instead attributable to the story's underlying message about the fragility of communities in the face of market forces. As such, what happened in Cheshire embodied the downside of the movement from "status to contract" that Sir Henry Maine declared to be the hallmark of modernity.[251] It is incumbent on law and economics scholars to take note of this phenomenon; we can not begin to do so with models or theories that do not recognize the existence of communities and the vital roles they play.[252]

[250] Barry Serafin, *Residents of Cheshire, Ohio Move Out of Their Polluted Town*, ABC Nightly News, May 13, 2002.

[251] Henry Sumner Maine, ANCIENT LAW: ITS CONNECTION WITH THE EARLY HISTORY OF SOCIETY AND ITS RELATION TO MODERN IDEAS, 164-65 (1861) ("The movement of the progressive societies has hitherto been a movement from Status to Contract.").

[252] Economists have begun to pay attention to the importance of non-market forces such as communities. For recent theoretical and empirical discussions, see*, e.g.,* Samuel Bowles and Herbert Gintis, *Social Capital and Community Governance*, 112 ECON. J. 412 (2002), Edward Glaeser, David Laibson & Bruce Sacerdote, *An Economic Approach to Social Capital,* 112 ECON. J. 437 (2002), or Glaeser, *supra* note 154. This literature has not yet made its way into law and economics, however.