The Banality of the Commons: Efficiency Arguments Against Common Ownership Before Hardin

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The Tragedy of the Commons *tends to be remembered today as the canonical statement of the idea that commonly-owned resources will be overused. But this idea was well known for centuries before Hardin wrote. Hardin acknowledged that he got the example of cattle in a common field from the early nineteenth century economist William Forster Lloyd, and by Lloyd's time the idea was already familiar and was already being applied to the analysis of overpopulation, Hardin's primary concern. This paper will trace the history of the idea that common ownership is inefficient, and will suggest why* The Tragedy of the Commons *nevertheless quickly attained its canonical status.*

Introduction

The Tragedy of the Commons stands today for something different from Garrett Hardin's main purpose. The article was primarily an argument for population control along the lines of the one-child policy that would be adopted a decade later by China. As Hardin put it in one of the article's subheadings, "Freedom to Breed is Intolerable."[1] But that is not how *The Tragedy of the Commons* tends to be remembered today. Rather, the article has become the canonical statement of the idea that commonly owned resources will be overused, a topic to which Hardin devoted only a few paragraphs. For example, the Wikipedia entry entitled "Tragedy of the commons" begins: "The tragedy of the commons is an economic theory of a situation within a shared-resource

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1 Garrett Hardin, *The Tragedy of the Commons*, 162 Sci. 1243, 1246 (1968).

system where individual users acting independently according to their own self-interest behave contrary to the common good of all users by depleting or spoiling that resource through their collective action."[2] The Wikipedia entry doesn't even mention overpopulation in the first several paragraphs.

The shift in the conventional understanding of Hardin's article seems to have taken place very quickly. When I first read *The Tragedy of the Commons* as a law student in 1986, eighteen years after its publication, the lesson we were supposed to draw from it was that private property is better than an unmanaged commons. We never discussed population control. The shift must have occurred even faster than that, because we read the article in Bruce Ackerman's 1975 collection *Economic Foundations of Property Law*. Ackerman's introduction to the article says nothing about overpopulation. His purpose in including the article was to answer the questions: "Why should the law give one individual the right to exclude others from a particular resource and use it as it seems to him best? Why not simply declare that all things are owned in common, that whenever anyone wants to use something he can do so?" Ackerman was writing in 1974, only six years after the article was published.[3]

This gap between what Hardin meant to say and how his words have been received is no doubt attributable to a couple of factors. First, overpopulation is no longer as much of a concern as it was when Hardin wrote. Between the mid-1940s and the mid-1970s, it was commonly believed that the world was heading toward a Malthusian crisis unless population growth could be brought under control. In retrospect, Hardin's article was just one manifestation of this worry, and indeed one that appeared near the end of the period of peak concern.[4] Second, Hardin's delineation of the mechanism by which a commons will be overused has obvious applications to the regulation of natural resources, even apart from the worry about overpopulation. Environmental protection, unlike overpopulation, has become a matter of even more widespread attention in the decades since Hardin published *The Tragedy of the Commons*. As a result, today the article represents, not the view that we must prohibit people from having too many children, but rather the idea that a commonly owned resource will be used inefficiently.

That idea has a history of its own, a history that I will explore in this paper. The notion that a commons will be overused and under-maintained was of course not invented by Hardin. It is a very old one. After describing the

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2 *Tragedy of the commons*, Wikipedia, https://en.wikipedia.org/wiki/Tragedy_of_the_commons (last visited Jan. 19, 2018).

3 Economic Foundations of Property Law 1 (Bruce A. Ackerman ed., 1975).

4 Robert J. Mayhew, Malthus: The Life and Legacies of an Untimely Prophet 183-212 (2014).

mechanism of the tragedy, Hardin acknowledged that "[s]ome would say that this is a platitude." He did not think it was a platitude. His argument was that the tragedy was recognized "only in special cases which are not sufficiently generalized," and that phenomena such as free parking, the extinction of some species of fish, and crowding in national parks were proof that the world did not yet understand the inefficiencies of common ownership.[5]

I think the inefficiency of commonly owned resources was more of a platitude than Hardin was willing to admit. That is no criticism of Hardin. He was writing in the journal *Science*, which must have had many readers who had never given any thought to property rights. Hardin himself was a biologist, not a historian of economic thought. His description of the inefficiency of common ownership was not supposed to be the main contribution of the article. His account of the commons was just a building block in an argument for population control. But efficiency arguments against common ownership were familiar long before *The Tragedy of the Commons*. Hardin's article may have been original in other respects, but this was not one of them.

I

Today, even among people unacquainted with the discipline of economics, the problems associated with commonly owned resources are a matter of everyday experience. Anyone who has shared an apartment or a house with non-family members is aware that common areas like the kitchen and the bathroom may not be cleaned to the standard one would expect from a person living alone. Everyone knows that public spaces like parks and beaches are more likely to be overcrowded than backyards and privately owned swimming pools. As a matter of substance, if not terminology, the inefficiency of commonly owned resources is a familiar phenomenon.

This has probably been true for thousands of years. Aristotle observed: "that which is common to the greatest number has the least care bestowed upon it. Every one thinks chiefly of his own, hardly at all of the common interest."[6] Thomas Aquinas likewise concluded that "when owners multiply there has to be a division of possessions, because possession in common is fraught with discord."[7] He noted that "it is not merely legitimate for a man to possess things as his own, it is even necessary for human life," because "each

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5 Hardin, *supra* note 1, at 1244-45.

6 Aristotle, *Politics*, *in* The Basic Works of Aristotle 1148 (Richard McKeon ed., 1941) (*Politics*, at II:3).

7 13 Thomas Aquinas, Summa Theologica 153 (Blackfriars ed. 1964-1981).

person takes more trouble to care for something that is his sole responsibility than what is held in common or by many — for in such a case each individual shirks the work and leaves the responsibility to someone else."[8] In both Aristotle and Aquinas, these passages are framed as commonsense responses to impractical critiques of private property, which suggests that both writers believed that readers would recognize the everyday problems that could flow from an unmanaged commons.

During the lengthy English controversy over Parliamentary enclosure, proponents of enclosure often made efficiency arguments against the traditional common fields.[9] Walter Blith, a mid-seventeenth century advocate of improvements in animal husbandry, explained that one barrier to more productive stock raising was "Unlimited Commons." The problem Blith perceived with the commons was that "every man layes on at randome, and as many as they can get, and so Overstock the same." And even the overstockers ended up losers, as Blith saw it. Because too many animals were grazing in one field, "once in foure or five yeares you shall observe such a Rott of Sheepe, that all that the Oppressor hath gained by eating out his poore Neighbours all the other yeares, is swept away in one, and so, little advantage redoundeth to any."[10] Blith calculated that two identical pastures, one "in Common, and the next adjoyning it Inclosed," would have very different values: "The one worth three hundred pounds in Common, the other neare a thousand."[11]

English agricultural guidebooks of the seventeenth and eighteenth centuries routinely pointed out that "[e]nclosing of Land brings a very great Benefit to the Husbandman," as the publisher Richard Blome put it in *The Gentleman's Recreations*.[12] In a commons, complained Walter Harte, "those proprietors that have a great live stock, consume all the herbiage in the latter end of spring, and the beginning of the summer," until "the lands in common can afford no more food."[13] Arthur Young, perhaps the most prolific English agricultural writer of the period, declared: "I must consider commons, however naturally rich in soil, as wastes."[14] That was primarily because of "the disorder in

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8 38 *id.* at 67.

9 E.P. Thompson, Customs in Common: Studies in Traditional Popular Culture 107 (1993).

10 Walter Blith, The English Improver Improved (London, John Wright 1652) (unpaginated dedication).

11 *Id.* at 75.

12 2 Richard Blome, The Gentleman's Recreations 254 (2d ed. London, R. Bonwicke et al. 1710).

13 Walter Harte, Essays on Husbandry 55 (London, W. Frederick 1764).

14 Arthur Young, General View of the Agriculture of the County of Lincoln 223 (London, W. Bulmer & Co. 1794).

stocking; because human nature being in their various capacities anxious of property, some through avarice, or a wish to get rich at once, stock so largely as to injure themselves, and oppress the common."[15] The productivity gains from enclosing a common field were so great, insisted John Mills, another agricultural reformer, that "inclosed countries generally maintain treble the number of inhabitains, or more, than the champaign [i.e., the common fields]," and that "those inhabitants are much better fed, and clad, than the common run of people in uninclosed lands."[16]

Eighteenth-century English agricultural writers also critiqued the common ownership of other resources, which they also found to be over-consumed. "[W]hoever takes a Survey of the Forrests," Richard Bradley noted,

> will find not only a want of Timber in those Places, but even the Prospect of a Supply for the future cut off by idle People living in their Neighbourhood; who, rather than be at the Expence of a little Firewood, or some trifling Tool or Utensil, will destroy young thriving Plants of Oak, which perhaps had already gain'd twenty or thirty Years of Time, and were in a prosperous State.[17]

To prevent the overuse of commonly owned trees, Bradley recommended privatizing the forests. Just as grazing commons were being enclosed, he suggested, "[t]he Forests likewise might turn to a good Account, were the Lands parcell'd out."[18] The Quaker reformer John Bellers agreed that "Our Forrests and great Commons" were "a hindrance to Industry" and "Nurseries of Idleness and Insolence." He suggested that "[i]f they were made liable to be divided by a Writ of Partition, in proportion to every one's Right, much of those Lands would be greatly improved."[19] This view was shared by critics of the commons in other European countries as well. For example, the French philosopher Volney lamented common field farming in Corsica, where after the harvest "the land again becomes public property, or rather public rapine and devastation, for every one has a right to take what he finds on it."[20] In

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15 *Id.* at 230.

16 3 John Mills, A New and Complete System of Practical Husbandry 425 (London, R. Baldwin et al. 1762-1763).

17 1 Richard Bradley, A General Treatise of Husbandry and Gardening 4 (London, T. Woodward and J. Peele, 1726).

18 *Id.* at 3.

19 John Bellers, *An Essay Toward the Improvement of Physick*, *in* John Bellers 1654-1725: Quaker, Economist and Social Reformer 128 (A. Ruth Fry ed., 1935) (1714).

20 *Cf.* Volney, View of the Climate and Soil of the United States of America 450-51 (London, J. Johnson, 1804).

Volney's view, Corsica had fallen far behind the rest of France in economic development, and "one of the most radical and active causes is the undivided and common state of the greater part of its territory."[21]

The common fields of course had their defenders; otherwise they could scarcely have existed for so long. Supporters of the commons argued that the critics had their facts wrong, in that common fields were not open to all but were governed by established norms regulating use. They also argued that even if common fields were less productive than enclosed fields, they were more egalitarian, in the sense that the poor depended on traditional common rights for their livelihood.[22] The debate rages still among historians. For our purpose, the relevant point is that Hardin's tragedy mechanism seems to have been very well known in the seventeenth and eighteenth centuries.

When English settlers began planting colonies in North America and the Pacific, they did not find any local grazing animals, but they encountered indigenous people who farmed in common fields. Colonial accounts often included efficiency critiques of indigenous resource use that mirrored criticism of the commons back home. John Locke, who was a colonial administrator as secretary to the Board of Trade, wrote of "the wild *Indian*, who knows no Inclosure, and is still a Tenant in common."[23] For Locke, this lack of private property contributed to the Indians' failure to improve their land, which made land in America much less valuable than land in England. Locke explained that "the provisions serving to the support of humane life, produced by one acre of inclosed and cultivated land, are (to speak much within compasse) ten times more, than those, which are yeilded by an acre of Land, of an equal richnesse, lyeing wast in common."[24] A century later, when two tribes in New York divided their fields into individual plots, two approving missionaries reported that "this is the *grand reason* of their superiority in point of agricultural improvements to their brethren, the Oneidas, Tuscaroras, etc."[25]

Colonial officials took the same dim view of common fields in New Zealand. The magistrate Walter Buller complained of the Maori: "So long as their lands are held in common they have, properly speaking, no individual interest in improvements, and consequently there is little or no encouragement

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21 *Id.* at 451.

22 J.M. Neeson, Commoners: Common Right, Enclosure, and Social Change in England, 1700-1820 (1993).

23 John Locke, Two Treatises of Government 305 (Peter Laslett ed., Cambridge Univ. Press 1970) (3d ed. 1698).

24 *Id.* at 312.

25 Jeremy Belknap & Jedidiah Morse, Report on the Oneida, Stockbridge and Brotherton Indians, 1796, at 29 (1955).

to industry or incentive to ambition."[26] R.S. Bush, another colonial official in New Zealand, agreed that "until their communistic customs are laid aside, no very great advancement will be made by the Natives generally."[27]

In the late nineteenth and early twentieth centuries, throughout the Pacific Rim, European and American colonizers reorganized indigenous systems of property rights in land, to convert what they perceived as common property systems into a system in which each parcel of land would be owned by a single person or family. In New Zealand, the British colonial government established a Native Land Court in the 1860s, to convert Maori property rights into English fee simple titles.[28] Soon after, Britain set up a similar institution to reallocate property rights in Fiji.[29] In the western United States, the Dawes Act of 1887 authorized the same kind of reorganization of tenure in much of the land still possessed by American Indians.[30] Similar processes took place in the German colonies of New Guinea and Samoa, in French Polynesia, and in the joint British-French New Hebrides (present-day Vanuatu).[31] While the details of these schemes varied, they were all structurally similar to the enclosure of European common fields over the preceding several centuries. One of the two primary avowed reasons for reorganizing indigenous property rights was to reduce the inefficiencies associated with common ownership. (The other reason was to facilitate the purchase of indigenous land by settlers.[32])

In short, long before Hardin, and indeed long before economics became an academic discipline, it was widely recognized that a commonly owned resource will tend to be over-consumed and under-maintained. As the physician

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26 New Zealand Parliament, Appendix to the Journal of the House of Representatives E-5, 11 (1862).

27 New Zealand Parliament, Appendix to the Journal of the House of Representatives G-2, 10 (1885).

28 David V. Williams, "Te Kooti Tango Whenua": The Native Land Court 1864-1909 (1999).

29 Peter France, The Charter of the Land: Custom and Colonization in Fiji 129-64 (1969).

30 Frederick Hoxie, A Final Promise: The Campaign to Assimilate the Indians, 1880-1920, at 147-87 (1989).

31 Peter G. Sack, Land Between Two Laws: Early European Land Acquisitions in New Guinea 127-36 (1973); R.P. Gilson, Samoa 1830 to 1900: The Politics of a Multi-Cultural Community 404-15 (1970); Colin Newbury, Tahiti Nui: Change and Survival in French Polynesia 1767-1945, at 216-24 (1980); Howard Van Trease, The Politics of Land in Vanuatu: From Colony to Independence 63-91 (1987).

32 Stuart Banner, Possessing the Pacific: Land, Settlers, and Indigenous People from Australia to Alaska 128-29 (2007).

Joseph Townsend declared in 1786, "It is well known that our commons, without stint, starve all our cattle. Here we clearly see the natural effects of that community of goods."[33]

II

Hardin, by his own account, took his example of cattle in a common field from William Forster Lloyd's *Two Lectures on the Checks to Population*, lectures Lloyd delivered at Oxford in 1832 and published the following year. Hardin uncharitably described Lloyd only as "a mathematical amateur,"[34] but Lloyd was in fact a professor of political economy at Oxford and one of the earliest economists to identify the concept of marginal utility.[35] Lloyd was a follower of Malthus who intended his description of the commons to fill a gap he perceived in Malthus's work. In assessing the originality of Hardin's contribution, it will thus be useful to consider Lloyd's *Lectures* and the role of the commons in Malthusian thought.

Malthus and likeminded writers argued that population growth was constrained by the supply of food. Because the population grows geometrically but the food supply can grow only arithmetically, Malthusians predicted that famine and/or war were inevitable. When the population reaches the point where there is no longer enough food to go around, the surplus people will either starve or be killed.

For a Malthusian, increased agricultural efficiency — from the enclosure of common fields or from any other cause — just delayed the day of reckoning. More food would support a higher population, but eventually the new, higher limit would be reached. The same was true of any ameliorative measure one could imagine. Colonization, for example, promised to bring enormous new areas under cultivation, but in Malthus's view colonization was merely "a partial and temporary expedient," because the population in the colonies would eventually reach the limit.[36] Likewise, aiding the poor might prevent

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33 Joseph Townsend, A Dissertation on the Poor Laws 45 (London, C. Dilly 1786).

34 Hardin, *supra* note 1, at 1244.

35 Richard M. Romano, *William Forster Lloyd — a Non-Ricardian?*, 9 Hist. Pol. Econ. 412 (1977); Mark Blaug, Economic Theory in Retrospect 288-89 (5th ed. 1996).

36 Thomas R. Malthus, An Essay on the Principle of Population 394 (2d ed. London, J. Johnson 1803). This discussion of colonization appears in the second, much expanded edition of Malthus's essay, but not the first edition. For much more on Malthus and the colonies, see Alison Bashford & Joyce E. Chaplin,

starvation in the short run, but only at the cost of enabling the population to grow even more. Starvation would come in the end.

But this prediction raised a question. Wouldn't a rational person, knowing that his children would suffer, choose to have no (or fewer) children? Malthus acknowledged that people who foresaw his predicted crisis could limit population growth on their own, in principle, by having fewer children. But he did not think this would happen. In an era before there were reliable methods of contraception, fewer children implied less sex. Malthus, in delicate language, suggested that chastity was not a realistic goal, at least not on the scale necessary to prevent the population from growing faster than the food supply. In some parts of Europe the population was growing more slowly than in others, he explained. In such places, "a foresight of the difficulties attending the rearing of a family, acts as a preventive check" on the growth of population. But this sort of rational behavior would never be enough of a check, because "[t]he cause of this slow progress in population cannot be traced to a decay of the passion between the sexes. We have sufficient reason to think that this natural propensity exists still in undiminished vigour." There would always be some who, "guided either by a stronger passion, or a weaker judgment, break through these restraints; and it would be hard indeed, if the gratification of so delightful a passion as virtuous love, did not, sometimes, more than counterbalance all its attendant evils."[37] Chastity was simply too hard. Passion would overwhelm reason.

This is the place in Malthus's argument where William Forster Lloyd sought to make a contribution. He suggested that there was no need to assume that people were unable to act rationally to prevent a Malthusian crisis. Even rational people, people able to overcome their passions, would continue to have children, Lloyd argued. That was because having one more child was like putting one more cow on the commons.

Lloyd began with the simplest hypothetical case, "two persons agreeing to labour jointly" and to share the resulting gains. He observed that "were either of them, at any time, to increase his exertions beyond their previous amount, only half of the resulting benefit would fall to his share; were he to relax them, he would bear only half the loss." As a result, "the motives for exertion" were only half of what they would be "were each labouring separately for his own individual benefit." Lloyd then increased the number of partners. With each increase, the incentive for work diminished proportionately, until

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THE NEW WORLDS OF THOMAS ROBERT MALTHUS: REREADING THE PRINCIPLE OF POPULATION (2016).

37 THOMAS R. MALTHUS, AN ESSAY ON THE PRINCIPLE OF POPULATION 62, 66 (London, J. Johnson 1798).

he reached the case of "a multitude," when the incentive for work would have "no force whatever," because "beyond a certain point of minuteness, the interest would be so small as to elude perception, and would obtain no hold whatever on the human mind."[38]

Lloyd then moved to a second hypothetical, in which two people "have a common purse, to which each may freely resort." He used the same reasoning to demonstrate that each person has twice the incentive to spend, as compared with the incentive to spend his own personal money, because "[t]he loss falling upon both, he spends a guinea with as little consideration as he would use in spending half a guinea, were the fund divided." And so on with larger numbers of partners, until "in a multitude of partners, where the diminution effected by each separate act of expenditure is insensible, the motive for economy entirely vanishes."[39]

Having children was just the same, Lloyd suggested, because parents did not bear the full cost to society of each new child who entered the world. In a metaphorical sense, "the children are maintained at public tables" rather than solely by their parents. With

> the obligation to prudence being placed upon the society collectively, instead of being distributed to the individual members, the effect is, that, though the reasoning faculty is in full force, and each man can clearly foresee the consequences of his actions, yet the conduct is the same as if that faculty had no existence.

Malthus's conclusion — that overpopulation was the fault of people who let their passions overcome their rationality — was unwarranted. Rather, overpopulation "is not, of itself, sufficient evidence that the fault lies in the people themselves, or a proof of the absence of a prudential disposition. The fault may rest, not with them as individuals, but with the constitution of the society, of which they form a part."[40]

Lloyd did not mean that the cost of feeding children was literally borne by society. At the time, with few exceptions, it was not. He meant that the expected cost to society of an additional person, in the Malthusian race between population and food supply, was not borne solely by the family that introduced the additional person into the world. Prospective parents knew that some people, eventually, would starve for lack of food, but they had no reason to expect that *their* child would be one of those people. Indeed, the odds were

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38 W.F. Lloyd, Two Lectures on the Checks to Population 18 (Oxford, S. Collingwood 1833).

39 *Id.* at 19.

40 *Id.* at 21, 23.

strongly against it. In general, employed laborers would have enough food, while unemployed laborers would not. Most laborers would be employed, and there was no way to know in advance of birth which ones would not be. "If there be no established order of succession among the laborers," Lloyd noted, "and no permanency in the possession of a place once obtained in the field of employment; then, though a man may know that it can contain no more, yet he will have no reason for expecting that his children cannot find their way into it."[41]

This is where Lloyd turned to the metaphor of cattle grazing on a common, to represent children entering the world. "If a person puts more cattle into his own field, the amount of the subsistence which they consume is all deducted from that which was at the command, of his original stock," Lloyd noted.

> But if he puts more cattle on a common, the food which they consume forms a deduction which is shared between all the cattle, as well that of others as his own, in proportion to their number, and only a small part of it is taken from his own cattle.

So too with new children, because "the field for the employment of labor is in fact a common, the pasture of which is free to all, to the born and to the unborn." Just as farmers overstock a grazing common, parents overstock the employment common.

> In the common for cattle, the young animal begins an independent participation in the produce, by the possession of a set of teeth and the ability to graze. In the common for man, the child begins a similar participation, by the possession of a pair of hands competent to labour.

In the end, "the commons, in both cases, must be constantly stocked to the point of saturation."[42]

Lloyd was drawing upon the conventional wisdom regarding the inefficiency of common fields, but he was using it to make a new point — that overpopulation is itself a commons problem. This is the same point that Hardin made a century and a half later in *The Tragedy of the Commons*. By Hardin's era, it was much easier to see that parents did not bear the full cost of bringing new children into the world, because many children, especially the children of the poor, were literally fed, clothed, and housed by the state. "*If* each human family were dependent only on its own resources," Hardin lamented; "*if* the children of improvident parents starved to death; *if*, thus, overbreeding brought its own 'punishment' to the germ line — *then* there would be no public interest in

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41 *Id.* at 29.

42 *Id.* at 31-32.

controlling the breeding of parents." But such was not the case: "our society is deeply committed to the welfare state, and hence is confronted with another aspect of the tragedy of the commons."[43] William Forster Lloyd would have agreed. Lloyd would have gone further: Take away the welfare state, he would have said, and things would be just the same.

III

The language for describing the inefficiency of commonly owned resources changed in the twentieth century. In the early part of the century, Arthur Pigou introduced the concept of externalities, which provided a concise way of describing the harm done when one person overuses a resource to the detriment of others.[44] In the 1950s, H. Scott Gordon published a mathematical "theory of a common-property resource" to explain the depletion of common fisheries.[45] In the 1960s, Mancur Olson wrote at length about the differing incentives faced by individuals and groups, and Harold Demsetz applied the idea of externalities to explain why some resources are individually owned while other resources are commonly owned.[46] All of this work came before Hardin wrote, but if he was aware of it he did not let on.

That may have helped *The Tragedy of the Commons* achieve its canonical status. Unlike much of what was being written at the time, Hardin's exposition of the tragedy involves no technical vocabulary, no math beyond addition and subtraction by one, and no concepts unfamiliar to non-specialists. There is some irony in Hardin's derogatory reference to Lloyd as "a mathematical amateur," because *The Tragedy of the Commons* is no more mathematically sophisticated than Lloyd's *Lectures*, and indeed it is quite a bit less mathematical than Gordon's discussion of commonly owned fisheries. In this respect mathematical simplicity was a benefit, not a cost.

The article's shortness may also have helped. The whole thing is six pages long (although six pages in *Science* is longer than six pages just about anywhere else). The explanation of the commons occupies only five short

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43 Hardin, *supra* note 1, at 1246.

44 A.C. Pigou, The Economics of Welfare 159-62 (1920). Pigou apparently did not use the word *externality*, but he is nevertheless generally credited with the first systematic discussion of the concept.

45 H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. Pol. Econ. 124 (1954).

46 Mancur Olson, The Logic of Collective Action: Public Goods and the Theory of Groups (1965); Harold Demsetz, *Toward a Theory of Property Rights*, 57 Am. Econ. Rev. 347 (1967).

paragraphs. Lloyd was much more thorough and thoughtful but he was not nearly as concise.

Perhaps most helpful of all was the catchy title. The phenomenon Hardin described had been well known for centuries, but it had never been given a name. In the end, Hardin's most important contribution may have been to invent a simple name for a ubiquitous process that was already familiar precisely because it was so pervasive.