

Reflections on Externality readings

Readings referenced in this discussion:

- Bergstrom, T. C. (1976). Regulation of externalities. *Journal of Public Economics*, 5(1–2), 131–138. [https://doi.org/10.1016/0047-2727\(76\)90064-5](https://doi.org/10.1016/0047-2727(76)90064-5)
- Bergstrom, T. C. (2010). The Uncommon Insight of Elinor Ostrom: The uncommon insight of Elinor Ostrom. *Scandinavian Journal of Economics*, 112(2), 245–261. <https://doi.org/10.1111/j.1467-9442.2010.01608.x>
- Coase, R. (1960). The Problem of Social Cost. *The Journal of Law and Economics*, 28.
- Demsetz, H. (1974). Toward a Theory of Property Rights. In C. Gopalakrishnan (Ed.), *Classic Papers in Natural Resource Economics* (pp. 163–177). London: Palgrave Macmillan UK. https://doi.org/10.1057/9780230523210_9
- Hardin, G. (1968). The Tragedy of the Commons, 162, 7.
- Schlager, E., & Ostrom, E. (1992). Property-Rights Regimes and Natural Resources: A Conceptual Analysis. *Land Economics*, 68(3), 249. <https://doi.org/10.2307/3146375>

Hardin's classic Tragedy of the Commons (1968) describes the inevitable overexploitation of common pool resources due to the failings of human nature. It is always disturbing to reread the piece and recall the pessimism and darkness of Hardin's worldview, and particularly the focus on overpopulation and the notion that breeding rights in a welfare society will doom us all in the long run. While his point may have some validity, his delivery seems a bit overly strident and lacking in awareness. Some of the insights I had not recalled from prior readings include:

- An interesting “photograph” metaphor - the idea (taken from Fletcher, Situation Ethics, apparently) that “the morality of an act is a function of the state of the system at the time it is performed,” i.e. that judgment of harms inflicted by a person cannot be judged without knowing the situational context - i.e. cannot pass judgment of harm based on a photo (real or metaphorical, seen without the full context). This resonates as it seems to parallel ideas of judging based on different cultural value systems.
- Conscience as a self-eliminating state - the idea that those who voluntarily curtail breeding due to conscience will guarantee that such conscience is bred out of the gene pool in time.
- Reliance on conscience (and moral opprobrium) as a means of enforcing beneficial norms is doomed to failure as it communicates an intended message (you will be punished by society for non-compliance) as well as an unintended one (you will be seen as a fool and taken advantage of if you do comply). Which leads to discussion of mutual, compulsory coercive measures (laws and taxes) as the appropriate response.
- New enclosures of the commons are challenging as they infringe upon someone's existing property rights, and thus create a stakeholder who loses out and thus opposes such changes. However, long-past enclosures are “baked in” to the system, as the people affected negatively by those changes are long since gone. This recalls ideas of land ownership: how can a person or entity claim legitimate ownership over land, as that land was almost certainly taken from someone in the distant past through violence or coercion. A current deed can only confer legitimacy to a particular point in time at which a victor claimed the spoils. Consider the Malheur bird refuge takeover in Oregon as an example of people making ridiculous claims to ownership.

In any case, these are secondary to the main idea for which this paper is usually cited (which is described quite clearly in Demsetz (1967) as well), which is that unregulated commons will be overexploited as each participant reaps the full rewards of non-cooperation while spreading the costs across all participants; and so

each person will choose to not cooperate, thus driving the commons to an open access situation in which all rent is dissipated and the environment is depleted. Hardin offers little in the way of a solution other than curtailing of freedoms, essentially establishment of property rights.

Stepping back slightly, we can consider the “commons problem” in the broader sense of externalities - when costs or benefits of a particular transaction fall on those not involved in the transaction, due to the cost of bringing such costs and benefits into the transaction itself, resulting in inefficient provision of the good (too little) or bad (too much). In the case of the Tragedy of the Commons, unrestricted access to a resource results in the actions of each person’s exploitation affects the ability of others to exploit, imposing a negative production externality on all others. The issue of externalities is considered in all these papers from several directions.

In praising the “uncommon insight” of Elinor Ostrom, Bergstrom (2010) places Ostrom’s work in relation to the two widely accepted schools of economic thought on dealing with the “commons problem”: Pigouvian centralized approach, in which an authority regulates, taxes, or subsidizes a good such that incentives align with efficient provision, and property rights approaches such as those described by Coase (1960) and Demsetz (1967). Bergstrom places Ostrom in a third category, in which she studies examples of communities that have come up with novel institutions to manage the commons problem often through a combination of partially-private property rights and communal rights and responsibilities.

Coase’s *The Problem of Social Cost* (1960) essentially describes the power of property rights in how the confer the ability to negotiate solutions favorable to each party potentially affected by the consequences of production of a good. In essence, he reframes a question of how should A, who inflicts harm on B, be regulated or restrained? - into a question of rights - should A be allowed to harm B or vice versa? In this reframing, he shows that government regulation (Pigou’s favored solution) may not always be the best means (though he does not dismiss it entirely either) - but that in many cases, assigning private property rights to one side or the other in the A/B market allows the two parties to negotiate to an optimal outcome. He explores the ramifications of various assumptions and identifies minimization of transaction costs as a fundamental concern. He concludes with a few points:

- “If factors of production are thought of as rights, it becomes easier to understand that the right to do something which has a harmful effect (such as creation of smoke, noise, smells, etc) is also a factor of production...” and thus can be considered in optimization if carefully framed.
- “In choosing between social arrangements within the context of which individual decisions are made, we have to bear in mind that a change in the existing system which will lead to an improvement in some decisions may well lead to a worsening of others. Furthermore we have to take into account the costs involved in operating the various social arrangements as well as the costs involved in moving to a new system. In devising and choosing between social arrangements we should have regard for the total effect.”

Demsetz (1967) defines a necessary condition to make a cost or benefit an externality: “the cost of a transaction in the rights between parties (internalization) must exceed the gains from internalization.” He sees the ability to negotiate as fundamental to internalizing costs, and provides examples of slavery and military draft as instances where no negotiation is possible, thus large externalities occur. He posits that if negotiations are allowed and no transaction costs exist, the solution will be efficient and independent of who was originally assigned the property rights; I think of that as part of the Coase theorem but Demsetz states it more clearly.

Demsetz goes on to look at the emergence of property rights through this lens, claiming that new property rights emerge as a response to changes to the cost-benefit calculus of a transaction - for example, new markets appear, new technologies shift production costs, or preferences change. This seems very interesting as an avenue to explore in the development of property rights in small scale fisheries: was there a driving change that made a TURF (e.g.) more likely to successfully develop - changes in markets, technology, resource availability, or preferences over property rights? And if such changes occur within a system in which negotiation is not possible, what would be the outcome? He gives an example of emergence of property rights within American aboriginal groups as the fur trade developed. Increasing demand for furs ==> more money for furs ==> more hunting ==> more externalities ==> greater need to develop and enforce property rights.

Later in the piece, Demsetz discusses communal ownership and the tragedy of the commons (a year before Hardin, though he didn't give it a catchy name!). Communal property rights are more challenging due to much higher negotiating costs and organizing costs. Importantly, with no single broker to take into account competing claims of present and future, current claims will be weighted far more heavily creating intergenerational equity issues. Communal property also rules out both "pay to use" and "pay not to use" systems simultaneously.

He wraps up with discussions of how a publicly held firm, commonly owned among many shareholders, does not face the same problems as a typical commons - due largely to legal modifications including a concentrated effective control in management (rather than broad management rights), limited liability, and ability to easily exit if preferences no longer align. It seems as if a TURF style of commonly held activity is more active participation and management.

Shlager and Ostrom (1992) lay out a more detailed schema for understanding property rights to better understand how they play out in common pool resource management, importantly distinguishing between de jure and de facto property rights (including combinations such as a de jure government concession managed by de facto rights internally). Briefly: rules create the rights; operational-level rules (such as access and withdrawal) are changed by collective-choice actions, which certain levels of property rights confer. (Constitutional-choice actions establish the initial institution.) They distinguish collective-choice property rights (rather than operational-level rules) to comprise management, exclusion, and alienation rights. Four classes of property rights holders bear one or more of these four right classes (operational-level plus three collective-choice level): see Table 1 in the paper:

TABLE 1
BUNDLES OF RIGHTS ASSOCIATED WITH POSITIONS

	Owner	Proprietor	Claimant	Authorized User
Access and Withdrawal	X	X	X	X
Management	X	X	X	
Exclusion	X	X		
Alienation	X			

Importantly, each class of right creates specific incentives: alienation rights (ability to sell one's stake) incentivizes long-term investment, since improvements can be recouped; exclusion incentivizes current investment, since benefits can be secured; management incentivizes (to a lesser degree) investment in governance structures. They then apply these concepts to understand the collective management of different Maine lobster fisheries and the implications.

Finally, a brief connection of these externality readings to Leibbrandt and Lynham's 2018 paper on whether initial allocation of property rights matters. The earlier readings focus a lot of attention on the importance of transaction costs and who liability, and give casual mention to the assumption that allocation of rights shouldn't matter to the final outcome. To examine this, L&L set up an experiment in which four players can extract a resource with a private gain and a negative externality that is collectively shared. In the first five rounds, players were allowed to take up to 25 tokens each from a pool of 100 tokens; the optimal extraction would be everyone taking 12.5 tokens. For the second five rounds, players were assigned property rights based on extraction in the first five rounds - one of three treatments: a) "grandfathering," i.e. proportional to extraction history, b) equal allocation, c) inverse grandfathering, i.e. those who extracted least in the past get the largest allocation. The results showed that compliance for equal and inverse grandfathering was significantly higher than compliance in the grandfathering scheme, challenging the notion that equity does not matter in allocation of property rights.