

## **Tragedy of the Commons - Community Health and Wellness in the US**

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There is an economic problem in which every individual tries to reap the greatest benefit from a given resource. As the demand for the resource overwhelms the supply, every individual who consumes an additional unit directly harms others who can no longer enjoy the benefits. Generally, the resource of interest is easily available to all individuals.

In 1974 the general public got a graphic illustration of the “tragedy of the commons” in satellite photos of the earth. Pictures of northern Africa showed an irregular dark patch 390 square miles in area. Ground-level investigation revealed a fenced area inside of which there was plenty of grass. Outside, the ground cover had been devastated.

The explanation was simple. The fenced area was private property, subdivided into five portions. Each year the owners moved their animals to a new section. Fallow periods of four years gave the pastures time to recover from the grazing. The owners did this because they had an incentive to take care of their land. But no one owned the land outside the ranch. It was open to nomads and their herds. Though knowing nothing of Karl Marx, the herdsmen followed his famous advice of 1875: “To each according to his needs.” Their needs were uncontrolled and grew with the increase in the number of animals. But supply was governed by nature and decreased drastically during the drought of the early 1970s. The herds exceeded the natural “carrying capacity” of their environment, soil was compacted and eroded, and “weedy” plants, unfit for cattle consumption, replaced good plants. Many cattle died, and so did humans.

The rational explanation for such ruin was given more than 170 years ago. In 1832 William Forster Lloyd, a political economist at Oxford University, looking at the recurring devastation of common (i.e., not privately owned) pastures in England, asked: “Why are the cattle on a common so puny and stunted? Why is the common itself so bare-worn, and cropped so differently from the adjoining enclosures?”

Lloyd’s answer assumed that each human exploiter of the common was guided by self-interest. At the point when the carrying capacity of the commons was fully reached, a herdsman might ask himself, “Should I add another animal to my herd?” Because the herdsman owned his animals, the gain of so doing would come solely to him. But the loss incurred by overloading the pasture would be “commonized” among all the herdsmen. Because the privatized gain would exceed his share of the commonized loss, a self-seeking herdsman would add another animal to his herd. And another. And reasoning in the same way, so would all the other herdsmen. Ultimately, the common property would be ruined.

Even when herdsmen understand the long-run consequences of their actions, they generally are powerless to prevent such damage without some coercive means of controlling the actions of each individual. Idealists may appeal to individuals caught in such a system, asking them to let the long-term effects govern their actions. But each individual must first survive in the short run. If all decision makers were unselfish and idealistic calculators, a distribution

governed by the rule “to each according to his needs” might work. But such is not our world. As James Madison said in 1788, “If men were angels, no Government would be necessary” (Federalist, no. 51). That is, if all men were angels. But in a world in which all resources are limited, a single nonangel in the commons spoils the environment for all.

A community is a complex organized social system. Our communities are a group of interacting individuals that share common values. Intent, belief, resources, preferences, needs, risks, and a number of other conditions are and affecting the identity of all and our degree of cohesiveness.

The tragedy of the commons is the depletion of a shared resource by individuals, acting independently and rationally according to each one's self-interest, despite their understanding that depleting the common resource is contrary to the group's long-term best interests. The tragedy of the commons has particular relevance in analyzing behavior in the fields of economics, evolutionary psychology, game theory, politics, taxation, and sociology. Some also see the "tragedy" as an example of emergent behavior, the outcome of individual interactions in a complex system.

The term "emergent" was coined by philosopher G. H. Lewes, who wrote: Every resultant is either a sum or a difference of the co-operant forces; their sum, when their directions are the same -- their difference, when their directions are contrary. Further, every resultant is clearly traceable in its components, because these are homogeneous and commensurable. It is otherwise with emergents, when, instead of adding measurable motion to measurable motion, or things of one kind to other individuals of their kind, there is a co-operation of things of unlike kinds. The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference.[4][5]

Economist Jeffrey Goldstein provided a current definition of emergence in the journal *Emergence*. [6] Goldstein initially defined emergence as: "the arising of novel and coherent structures, patterns and properties during the process of self-organization in complex systems". Goldstein's definition can be further elaborated to describe the qualities of this definition in more detail:

The common characteristics are: (1) radical novelty (features not previously observed in systems); (2) coherence or correlation (meaning integrated wholes that maintain themselves over some period of time); (3) A global or macro "level" (i.e. there is some property of "wholeness"); (4) it is the product of a dynamical process (it evolves); and (5) it is "ostensive" (it can be perceived). For good measure, Goldstein throws in supervenience -- downward causation.[7]

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