Almost 50 years ago, Garrett Hardin coined the term “tragedy of the commons,” borrowing the metaphor from Reverend William Forster Lloyd, Oxford Professor of Political Economy, who in 1833 described the “commons” to illustrate the catastrophe of Malthusian population growth.\(^1\)\(^2\) The term has now come to mean the problems resulting from unmanaged consumption of any public resource freely available to all. It has largely been forgotten that Hardin’s paper was also about overpopulation and, in his words, the unlimited “freedom to breed.” We propose that the “tragedy of the commons” applies equally to the unspoken yet ubiquitously-accepted “freedom to drive” whenever and wherever we want that permeated American urban planning in the 20th century, and indeed still does.
The American love affair with the automobile began soon after its invention: by 1930 there was one car for every 4.6 persons. American city planners responded by attempting to accommodate the automobile as the primary mode for all activities; by 1960 American car ownership was twice that of Great Britain’s. The national and local street systems of the United States comprise more than four million miles of roadway, whose cumulative development and operational costs represent trillions of dollars. Yet, with the exception of a few toll facilities, all roads may be accessed freely by any licensed driver and vehicle. This has resulted in our roadways—“the commons”—becoming increasingly congested, with numerous negative social, economic, and environmental externalities—“the tragedy.”

Regardless of the merit of Hardin’s original premise of the negative consequences of the “freedom to breed,” substituting “drive” for “breed” captures the essence of a fundamental transportation problem. The remainder of this paper presents thirteen arguments from Hardin’s 1968 paper, reexamined and reinterpreted from the point of view that the urban arterial is a vital public “commons” which is neglected, even abused, by current U.S. transportation policy.

**Tragedy of The Commons Reexamined**

Hardin begins his paper thus:

1. At the end of a thoughtful article on the future of nuclear war, Wiesner and York concluded that: “Both sides in the arms race are ... confronted by the dilemma of steadily increasing military power and steadily decreasing national security. It is our considered professional judgment that this dilemma has no technical solution. If the great powers continue to look for solutions in the area of science and technology only, the result will be to worsen the situation.”

Just as the arms race has no technical solution, it is our considered professional opinion that automobile congestion will not be solved by auto-oriented technology. In the 20th century, the technical solutions attempted were highway expansion, traffic signal coordination, and other auto-focused strategies. Now in the 21st century we are continuing with the erroneous assumption that automobile-based technology is the solution: e.g. sustainable fuels, electric cars, Transportation Network Companies (e.g. Uber), and most recently, driverless cars. However, continuing to facilitate automobiles, regardless of how “green” or how “smart,” will not solve the problem of too many cars destroying the heart and functionality of our cities and exceeding the capacity of our urban arterials. (Figure 1.) They are still cars, not people, decreasing livability rather than enhancing it. Still, much transportation policy rests on the freedom to drive.

2. A technical solution may be defined as one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality.

This quote precisely describes the 21st century automobile-technological solutions described above. All still enable us retain our love affair with cars, requiring little or no change in our basic travel behavior and mode choices. Furthermore these solutions demand no changes in community values on the allocation of public space disproportionately to cars instead of people and they continue to ignore the fact that public transit can move ten times as many people in half the space as automobiles.

3. It is fair to say that most people who anguish over the population problem are trying to find a way to avoid the evils of overpopulation without relinquishing any of the privileges they now enjoy.

We would argue that those who promote purely technological solutions to solve traffic congestion are also trying to address the “evils” of driving without relinquishing any of the privileges and benefits that cars provide: door-to-door service, privacy, no interactions with strangers, etc. Driving a Tesla makes it possible for us to feel better about “being greener” without changing our behavior.

4. Specifically, can Bentham’s goal of “the greatest good for the greatest number” be realized? ... We want the maximum good per person; but what is good?

For Hardin, “greatest number” meant ever-increasing populations. For us, the greatest good for the greatest number is
clearly rapid public transit. It carries ten times (or more) people per equivalent width than roadways. Cities such as London and Beijing are inconceivable without a robust extensive subway network. Even small cities benefit from rapid mass transit (not simply slow city busses). Even tiny Brescia, Italy, with a population of 192,000 people, has an underground metro with three-car trains moving 8,500 passengers per hour (pph) per direction in essentially the width of one traffic lane; with 90-second headways, it could carry 17,000 pph. And it is driverless. This kind of technology is superior to automated cars in terms of both feasibility and results. Urban arterials need convenient, reliable, and frequent transit, both above and below ground, for cities to remain functional and livable. (See Figure 2.)

5. In real life incommensurables are commensurable. Only a criterion of judgment and a system of weighting are needed...

American transportation planners’ focus on auto-technological solutions use methodologies focused on auto congestion, often inexplicably disregarding transit even in situations where transit seems an obvious solution. The criterion of judgment/system of weighting is exactly what is lacking. Currently, transportation modes are evaluated in silos: first it is determined what is needed to accommodate all those who want to drive to a site. Transit is secondary, if considered at all, and often only existing transit service. Bicyclists and pedestrians are similarly overlooked. What is lacking is a system and method of evaluating all modes holistically. We should be evaluating: What is the transit quality of service? What if transit travel times were comparable to auto driving? Instead, the status quo is to assess: Of all who would drive, how can we provide road and parking capacity?

We don’t let our children choose only junk food, we give them healthy choices. Why don’t we provide healthy transportation choices?

6. Man must imitate this process. There is no doubt that in fact he already does, but unconsciously. It is when the hidden decisions are made explicit that the arguments begin.

The retention of urban arterials as a free commons for drivers entails many hidden decisions and hidden costs. Two in particular need to be made explicit. First, auto driving has many subsidies, including the cost of building/maintaining roads and underpriced parking. Some cities have begun the hard work of changing public policy of free/underpriced parking, including the California cities of San Francisco, Berkeley, Santa Monica, and San Diego.

Second, Traffic Impact Studies (TIS), whose primary focus has been how to accommodate cars, must evolve. Transit is relegated to a separate document if it is addressed at all. An ITE committee is currently developing direction for the profession so that TIS routinely examine transit for land development sites at the same level of detail as auto traffic.

7. Adam Smith ... contributed to a dominant tendency of thought that has ever since interfered with positive action based on rational analysis, namely, the tendency to assume that decisions reached individually will, in fact, be the best decisions for an entire society. If this assumption is correct it justifies the continuance of our present policy of laissez-faire in reproduction...If the assumption is not correct, we need to reexamine our individual freedoms to see which ones are defensible.
A common manifestation of this phenomenon is the school journey. Most parents individually decide that it is best for them to drive their children to school instead of having them walk (or walking with them).

A visit to any school ten minutes before bell time will reveal the adverse consequences of these individual decisions: traffic congestion for all and unsafe conditions for the few who do walk. In twenty-seven child-years of walking to school (three children walked for nine years each), the only time that one of the author’s children was hit by a car was by another parent driving his child to the same school from the same neighborhood.

8. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.

Freedom to drive brings gridlock to the commons of the urban arterial, as illustrated succinctly by Figure 3.

9. The argument has here been stated in the context of the population problem, but it applies equally well to any instance in which society appeals to an individual exploiting a commons to restrain himself for the general good—by means of his conscience. To make such an appeal is to set up a selective system that works toward the elimination of conscience from the race. The long-term disadvantages of an appeal to conscience should be enough to condemn it.

Dealing with the overused (i.e. congested) and underpriced urban arterial cannot be solved by asking people to drive less because it’s “better for society.” While this may not have the same dramatic long-term consequences as Hardin describes with respect to overpopulation, we would argue that those who voluntarily do not abuse urban arterial capacity (bus riders, bicyclists etc.) out of conscience, merely make it easier for those who refuse to or cannot give up driving. Moreover, transit riders and bicyclists often incur costs (mainly time) without being recompensed by those who benefit from fewer cars on the road, i.e. those who continue to drive.

10. To keep downtown shoppers temperate in their use of parking space we introduce parking meters for short periods, and traffic fines for longer ones. We need not actually forbid a citizen to park as long as he wants to; we need merely make it increasingly expensive for him to do so. Not prohibition, but carefully biased options are what we offer him. A Madison Avenue man might call this persuasion; I prefer the greater candor of the word coercion.

Making it increasingly expensive to park as long as one wants to is exactly the point of Donald Shoup’s proposal, which many cities are increasingly adopting. A similar approach seems promising for driving.

11. To say that we mutually agree to coercion is not to say that we are required to enjoy it, or even to pretend we enjoy it. Who enjoys taxes? We all grumble about them. But we accept compulsory taxes because we recognize that voluntary taxes would favor the conscienceless. We institute and (grumblingly) support taxes and other coercive devices to escape the horror of the commons.

An alternative to the commons need not be perfectly just to be preferable.

People may not enjoy and indeed tend to resist many restrictions including taxes, but we accept them in order to be part of society. Similarly, auto restrictions may not be popular but are still just, acceptable, and socially optimal. But the status quo of relying only on people with a conscience (e.g. environmentalists) to drive less is not working and in fact enables those “without a conscience” to drive more.

12. It is the newly proposed infringements that we vigorously oppose; cries of “rights” and “freedom” fill the air. But what does “freedom” mean? When men mutually agreed to pass laws against robbing, mankind became more free, not less so. Individuals locked into the logic of the commons are free only to bring on universal ruin; once they see the necessity of mutual coercion, they become free to pursue other goals. I believe it was Hegel who said, “Freedom is the recognition of necessity.”

In the same vein, we posit that some restrictions on driving produce other freedoms. We would argue that restricting the
**freedom to drive** would be replaced by forms of mobility free of annual expenditures on insurance, registration, and car repairs as well as parking tickets, moving violation citations, and traffic collisions.

As Eleanor Roosevelt said, “With freedom comes responsibility.” Americans singularly focused on the freedom to drive lose sight of the responsibilities and costs of that freedom. Parents routinely make this argument to their teenagers begging for driver’s licenses. These costs include the obvious (to adults) fixed and operational costs. But there are also unknown costs: parking tickets, moving violations, collision deductibles, and potential liability. Not to mention the responsibility to be sober when driving. It is heartening that many millennials are now defining freedom as not owning a car, thus being free from all these responsibilities.³

**Conclusion**

Hardin concludes his paper:

*The only way we can preserve and nurture other and more precious freedoms is by relinquishing the freedom to breed, and that very soon. "Freedom is the recognition of necessity" and it is the role of education to reveal to all the necessity of abandoning the freedom to breed. Only so can we put an end to this aspect of the tragedy of the commons.*

Similarly, to retain other freedoms, including freedom to walk safely on our streets and freedom to spend our discretionary dollars on things besides car expenses, we must relinquish the freedom to drive, at least in our cities. Europe has surpassed the United States: there, cities with populations of only 150,000 feature pedestrian streets, bus-only streets, city entrance tolls, congestion charges, traffic-restricted zones, woonerfs, and/or 30 kilometer /hour zones.⁴ (See Figure 4.)

But—and this is essential—restrictions on driving need to be accompanied by the provision of reasonable options for other mode choices. In short, urban arterials should be more than just conduits for cars: they must provide equal access for all modes and all travelers.

The role of education is “to reveal to all,” and since “ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information, then clearly the role of education belongs to us.”¹¹ *itej*

**References**

2. Lloyd, William Forster. Two lectures on the checks to population. England: Oxford University, 1833.

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*a) b) c)*

*Figure 4. European limitations on driving: a) London’s congestion charge zone; b) pedestrian street (Brescia) present in most European cities; c) traffic-restricted zones (ZTL) in Italy.*¹⁰
Trip Generation Manual, 10th Edition is On Its Way!

The latest edition of ITE’s Trip Generation Manual is well on its way to production and is expected to be available for purchase at the upcoming Joint ITE/CITE 2017 Annual Meeting and Exhibit this summer in Toronto, ON, Canada. The Trip Generation Manual, 10th edition has benefitted from a new online data collection platform that helped ITE collect new data from more than 1,700 sites, including a new source of urban data, both vehicle- and people-based. The new publication will also include more streamlined publication options with options for hard copy, electronic, and data availability.

More information on publication formats and pricing will be announced soon as will technical requirements for a new web-based Trip Generation app.