

An Externality Exercise

If actions I might take would provide benefits for other people which I cannot charge them for, I have too little incentive to take them. If my actions would impose costs on other people which they cannot charge me for, I have too much incentive to take them. The obvious solution is for government to subsidize or mandate the production of positive externalities, tax or ban the production of negative externalities, making us all better off.

There is a practical problem with this widely accepted argument for government interventions in the marketplace: One person's actions are quite likely to affect others in both directions, create both positive and negative externalities. Someone arguing for a subsidy is likely to add up all the positive externalities and miss the negative ones. Someone constructing an argument for taxing or banning something is likely to do it the other way around.

I encountered this problem in my [first piece](#) of published economics, on population. People warning of overpopulation argued that each additional child, by making the world more crowded, imposed costs on everyone else, that it would therefore be a good thing if we had fewer children.

Part of the argument was simply bad economics; a child does not come into the world with a deed to his per capita share of the world's resources clutched in his fist. To the extent that resources are privately owned, he gets them only if he, or his parents, offers something of at least equal value in exchange.

But not all relevant resources are privately owned. My child might pollute the air your child breathes. He might commit crimes against your child. He might use the political system to redistribute in his favor at your child's cost. All of these are negative externalities.

My child might also invent the cure for your child's disease, write a book that gives your child pleasure, help pay off the national debt, bear part of the burden of taxation for national defense, in any of a variety of ways make your child better off. When I tried to add up negative and positive externalities I found that I could not estimate them accurately enough to sign the result, to figure out whether, on average, the existence of one more child made the rest of us better or worse off, whether we should be taxing childbirth or subsidizing it.

The same problem arises for many other issues. Consider the case of schooling. Those who wish to justify our present system of public schools argue that educating children benefits everyone and so should be paid for by the state. For my views on that issue, see Chapter XXX, on climate change, Chapters XXX-XXX.

I offer the following challenge to readers. List all the positive and negative externalities from educating children that you can think of. For a second challenge, pick some other public policy commonly defended on externality grounds and try to list the externalities with the wrong sign, the ones that are an argument for subsidizing what we now tax or taxing what we now subsidize.

A Problem with Nash Equilibrium

The idea is that every player of a multi-player game chooses the strategy best for him, given the strategies all the others are following, the problem that “given the strategies all the others are following” is not well defined. My choices change what alternatives are available to others; in defining a strategy we must assume not that other players don't react to my choice but that they react in some specified way, some way we can describe as following the same strategy in the

differing conditions due to the different choices I might make. There is, in the general case, no theoretical basis for deciding what that specified way is — and it matters.

Consider an oligopoly, an industry made up of a small number of firms, each producing the same good. Each firm produces a quantity of that good and sells it at a price. If one firm changes the quantity it produces and sells the others can no longer all produce and sell the same quantity as before at the same price as before.

If we define a firm's strategy as a price, assume that when I change my price everyone else keeps the price he is charging the same, the result is Bertrand competition; as long as price is above cost it pays a firm to charge a penny less than everyone else so as to expand to the whole market, or at least as much as it can produce at a marginal cost lower than that. Every firm does that, so the equilibrium, as in perfect competition, is price equal cost.

Suppose instead we define strategy as quantity, assume that when I change the quantity I produce everyone else keeps his output constant. Price then adjusts to the price at which total quantity demanded equals our summed production. The analysis of that problem is more complicated and yields a different result.

This is not a matter of having multiple Nash solutions, which is also a possibility — everyone driving on the right is a Nash equilibrium, and so is everyone driving on the left. It's a matter of not knowing what the Nash solution is until you make an arbitrary definition of what counts as a strategy.

Obesity, Wireheads, and the case for and Against Paternalism

Suppose we come up with really good pleasure drugs, drugs that give us lots of pleasure without negative side effects such as hangovers or cirrhosis of the liver. If we accept the economist's model of the rational actor their invention is clearly a good thing. It expands our choice set, provides us one more and possibly better way of getting what we want.

To people skeptical of the rational model, that conclusion is less clear. Consider an extreme version. Larry Niven, in some of his stories, describes wireheads, people who have had a wire inserted into the pleasure center of their brain and stimulate it with a mild electric current. The intense pleasure that results dominates all other concern, making it possible for a wirehead to die of hunger and thirst because getting food or drink is simply more trouble than it is worth.

For a more homely example, consider a pleasure drug that many of us overdose on: Chocolate bars. If you have more elevated tastes, substitute dinner at a four star restaurant in Paris. While it is true that food is useful to keep us alive, sufficient food for that purpose — lentils, powdered milk, vitamin pills, rice or potatoes — does not cost very much or taste very good. Most of what we spend on food buys pleasure. In modern societies calories, even moderately tasty calories, are cheap. People like to eat. Voila: An obesity epidemic.

For many years I, like many people, wished to be thinner and wasn't. Considering the situation as an economist, it followed that the benefit to me of lost weight must be less than the cost. Introspection provided a less complimentary picture of my role in the situation. It looks rather as though I was, like Niven's wireheads, irrationally willing to sacrifice my own long term welfare to my own short term pleasures.

For a different angle on the situation, consider the question of whether consumer sovereignty, the principle of accepting individual actions as proof of what we value, apply if we have good reason

to regard the actions as due to adaptations to a past environment very different from the one we now live in, evolutionary mistakes. In most past environments, eating when you had the chance, eating enough to get fat, was a sensible strategy, since next month might be famine. Current obesity is, from an evolutionary standpoint, simply one more case of humans being poorly adapted to their current environment.

The field of behavioral economics deals with predictable patterns of behavior that appear inconsistent with rationality as economists understand it. My contribution to the field is a chapter, "[Economics and Evolutionary Psychology](#)," in the book *Evolutionary Psychology and Economic Theory*. In it I try to show that several patterns of behavior puzzling in terms of the assumptions of economics make sense in terms of evolutionary psychology; they can be explained as behavior that got hardwired into us because it increased an individual's reproductive success in the hunter gatherer societies where our species spent most of its history.

Consider, as one example, the endowment effect, the observation that individuals value items that belong to them more than items that do not even if, as in the classic Cornell coffee cup experiment, who owns what is the result of random chance. I explain this as a commitment strategy designed to enforce property rights in a world without police and courts, the human elaboration of the territorial behavior observed in many animal species.

Following out the logic of that argument one might conclude that greater choice sometimes makes us worse off. Is that an adequate reason to support restrictions on fat in food, large sodas, cheap junk food in restaurants and grocery stores? Should we support high taxes on food designed to force consumers to compensate for their irrational tastes?

If we had a government run by benevolent philosopher kings, that might make sense. But, although I may sometimes be a bad judge of my own welfare, I have one enormous advantage over any one else: Unlike almost everyone else in the world, I can be trusted to put my own welfare very high in my priorities. Once we shift the decision to someone else, however rational, we can expect him to make decisions for me in his interest rather than mine.

Patients are imperfectly informed about the competence of doctors. Why not solve that problem by having some competent authority decide which physicians are allowed to practice — the theory of medical licensing as it now exists. The practice is that the medical profession has used licensing to hold down the number of physicians, sometimes in ways unrelated to their professional competence.¹ That is why it would be better to allow the competent authority to certify doctors, telling patients whether that authority considers them competent, and then let the patients decide for themselves whether to accept the authority's judgement.

If you do not find that claim convincing, you might consider the wide range of other professions that also require licensing—yacht salesmen, egg graders, barbers and the like. It would be a curious coincidence if it turned out that medical licensing existed, and functioned, for wholly benevolent purposes, unlike almost every other example of professional licensing.

¹ For examples see M. Friedman, *Capitalism and Freedom*, Chapter 9.