Chapter 2: On Incentives

Dear Political Economic Digest Series participant,

Welcome to the second series of the Political Economic Digest. In the last series we discussed about the rights of an individual and his/her role in the society. We hope you enjoyed the readings. Today, we'll be discussing on what makes people what they do i.e. what motivates people?

Let's start with a question! Why are you reading this? You have your own reason, so do the others. Even though the answers may vary, there is one common underlying reason behind everyone who reads this. They have some self-interest. They hope to gain something (Personal development). Why is PED team going through all of this effort? We have our own reasons (organizational objective achievement). Why does the butcher in your neighborhood, go through all the trouble of waking up every morning and slaughtering goats and chickens? So that you can have meat delicacies? No, he has his own self-interest (profit).

Similarly, why is it that people always keep their houses and gardens clean but throw garbage on the public roads? Why is it that Bagmati is so polluted and no one cares for it whereas when Fewa lake gets polluted the local businessmen and general public rush to clean it? People have no incentive to clean Bagmati because even if they put their energy and effort to clean it, there isn't any chance of them benefitting from a clean Bagmati river whereas the local businessmen and general public of Pokhara have lots to gain (or lose) by putting their efforts and energies to clean Fewa lake. You reap benefits of having a clean house and clean garden but you don't reap direct benefits (or worthy enough) by cleaning the streets.

Hence, we can observe that every individual responds to an incentive. And the incentive can be something else than just the profit or money. The incentive can be time, personal satisfaction or anything else. Everyone acting in their self-interest isn't necessarily bad, but it can be beneficial instead. For example, the self-interest of the butcher (profit) and your self-interest (desire to eat meat) converge to let us interact with each other for mutual benefit. Only when a certain party uses force or fraud against other then the exchange is harmful. With this, let's get to our reading list for the series.

In his article, "Incentives Matter", famous economist Russell D. Roberts discusses why incentives matter in every aspect of our lives. He has presented numerous examples on how incentives affect people's behaviors. From the behavior of the captain of slave ships in 18th century England to bakers of Chile during the hyper-inflation era, everyone is found to be acting in their self interest and the change in the incentive structure also changes their behaviors. The bottom line, people respond to incentives and money might not be the only incentive.

In his article, “Slavery, Snakes, and Switching: The Role of Incentives in Creating Unintended Consequences”, another famous economist Glen Whitman discusses how incentives can have unintended consequences and how the failure to comprehend this can result in disasters out of even the well-intentioned policies or activities.

The third reading is an excerpt from a paper “Policy Options for Public Enterprises Reforms in Nepal”. The paper discusses the performance of two public enterprises in Nepal – Nepal Airlines Corporation and Hetauda Cement Industry.

Happy reading! If you are interested to further explore this issue, we have lots of texts and visuals on the subject at the Political Economic Resource Center of Samriddhi Foundation. Feel free to drop by!

Questions to think about:

1. We talked about everyone being self-interested. Everyone thinks of their benefit from an activity or engagement before getting involved. Do you agree with this statement?

2. Is this self-interested nature of people living in the society harmful? Or is it beneficial? When does, the self-interest of an individual become harmful for the society?

3. The transporters are demanding yet another raise in transport fares currently. Based on the theory of incentives as discussed in the provided articles, think: what will be the effect of increased fare on number of students identity cards? Will the number of student cards increase, decrease or remain the same?

4. Why do you think private enterprises out-perform government run enterprises? How many state run enterprise can you list that are performing better than private enterprises?

5. What can be done to improve the performance of public sector in Nepal?

6. Why are Nepalese people renowned for their hard work and enterprising skills abroad and yet very different when inside the country?

Have an enjoyable read! Please feel free to send us an email if you have any queries.

Note: The discussed articles are below.

Incentives Matter

Russell D. Roberts

Towards the end of the 18th century, England began sending convicts to Australia. The transportation was privately provided but publicly funded. A lot of convicts died along the way, from disease due to overcrowding, poor nutrition and little or no medical treatment. Between 1790 and 1792, 12% of the convicts died, to the dismay of many good-hearted English men and women who thought that banishment to Australia shouldn't be a death sentence. On one ship 37% perished.

How might captains be convinced to take better care of their human cargo?

You might lecture the captains on the cruelty of death, and the clergy from their pulpits did just that. You might increase the funds allotted by the state provided to the captains based on the number of passengers they carried. You might urge the captains to spend more of those funds for the care of their passengers. (Some entrepreneurial captains hoarded food and medicine meant for the convicts and sold them upon arrival in Australia.) You might urge the captains to spend the money more carefully. Shame them into better behavior.

But a different approach was tried. The government decided to pay the captains a bonus for each convict that walked off the boat in Australia alive.

This simple change worked like a charm. Mortality fell to virtually zero. In 1793, on the first three boats making the trip to Australia under the new set of incentives, a single convict died out of 322 transported, an amazing improvement.

I don't think the captains got any more compassionate. They were just as greedy and mean-spirited as before. But under the new regulations, they had an incentive to act as if they were compassionate. The change in incentives aligned the self-interest of the captains with the self-interest of the convicts. Convicts were suddenly more valuable alive than dead. The captains responded to the incentives.

Incentives matter. The most famous example in economics is the idea of the demand curve—when something gets more expensive, people buy less of it. When it gets less expensive, people buy more of it.

Some find this bedrock principle of economics hard to accept, based on introspection. "When the price of gas goes up, I still buy gasoline," says the skeptic. Or in its more extreme form: "You need gasoline, so people will keep buying it even when it gets more expensive."

You may still buy gasoline when it gets more expensive. But you will try and find ways to buy less. Not necessarily zero, less.

Thinking about how people respond to the incentive of the higher price opens up a world of possibility beyond the cold turkey of going without. When gasoline gets more expensive, some people car pool, some people drive at slower speeds, some try and combine multiple errands into one trip. Let the price of gasoline rise enough and be expected to stay higher for a long enough period of time and some people will buy a car that gets better mileage, move closer to work or postpone or cancel that order for the pleasure boat that takes $400 to fill its tank when gasoline is $3 a gallon.

Not everyone will do all of these things. Some people will do very few of them. But the overall effect of an increase in the price of gasoline is to discourage the purchase of gasoline.

And as something gets less expensive, we want to have more of it, everything else held equal.

*[**Note:** You can watch this video on incentives matter by Professor Angela Dills to understand better**]***

People respond to incentives. But how they respond can be very creative. During a period of hyperinflation in Chile, the story is told that the government's imposition of a maximum price made it unprofitable for suppliers to sell bread—the legal maximum was below the cost of production.

A simple prediction would be that bread would disappear from the shelves. But that prediction underestimated the ingenuity of bakers in responding to incentives. Their first response was to shrink the loaf of bread until the cost of a loaf fell below the legally mandated price. The government then mandated a minimum weight for a loaf of bread. The bakers responded by selling the bread raw, so that the weight of the raw dough could meet the minimum. As inflation climbed, it became unprofitable to sell even the raw dough to meet the minimum. So the enterprising bakers sold the raw dough in bags with water so the minimum weight could be achieved.

Despite a common belief that economics is about money, non-monetary incentives can be just as important as monetary incentives in affecting behavior. Time is one important non-monetary factor in what we do.

Suppose you're a huge Beatles fan. It is announced that through a miracle, the Beatles will be reunited for one farewell concert one month from today. All four Beatles will be appearing in a small intimate theater near your house. You're ecstatic until you hear that the concert is free and that seats for the concert will be handed out on a first-come, first-served basis: the first 250 fans in line be allowed to hear the Beatles.

The concert isn't free. It's going to be very expensive—if you want to attend you're going to have live in front of the theater for a month. Otherwise, you won't be one of the first 250. And it might be dangerous as well. When goods are priced so that people want to buy a lot more than is available, people don't always line up courteously.

Yogi Berra once famously remarked (or at least supposedly remarked) when asked about a popular restaurant, "It's so crowded, nobody goes there any more." Like all good Yogiisms, the statement's absurd but closer examination reveals a hidden truth. What he could have meant was that is was so crowded that a person with a high value of time or a desire for a more relaxed atmosphere had better alternatives. Or to say it more succinctly, "It's so crowded, nobody who's anybody goes there anymore." In fact, Yogi may have meant the opposite—it's so crowded, you have to be somebody to get in—the owners keep out the riff-raff.

So money isn't all that matters. Adding time to the list of incentives isn't enough either. People care about their reputation and fame and their conscience. They care about glory and patriotism and love. All of these can act as incentives.

When an economist says that incentives matter, the non-economist sometimes hears only that people respond to prices. But what the economist really means is that holding everything else constant—the amount of fame or shame, glory or humiliation—and increase the monetary reward, and people will do more of it. Lower the monetary reward while holding those non-monetary factors constant and people will do less of it.

Economists often focus on monetary incentives because they are observable and usually easier to change than non-monetary incentives. An economist will say that when the income of doctors goes up, more people will want to be doctors. People often misunderstand this statement to imply that doctors are motivated by money rather than non-monetary motives to be doctors. But all it means is that holding the non-monetary satisfactions of medicine constant, increasing the monetary satisfaction will make medicine more attractive relative to other professions. If we could measure or stimulate the non- monetary satisfactions of doctors, those factors would be just as relevant as the monetary ones.

The difference between monetary and non-monetary incentives can be seen in the shortage of kidneys available for transplant. It is currently against the law to buy and sell kidneys in the United States. The current supply of kidneys relies on altruism. Thousands of people each year endure the risk of death to donate a kidney to a loved one or a stranger. Others give up their kidneys after death. This willingness to donate is motivated by a desire to help others and that is a powerful incentive. But it is not a sufficiently powerful incentive to create a supply equal to the demand. Thousands die each year waiting for a kidney transplant.

If we want to increase the number of kidneys available to patients with failing kidneys, we're back in the situation of the Australian convicts and those tough captains. We need to increase the incentive to provide kidneys. We can exhort people to give up their kidneys—running more public service announcements and trying to convey the satisfactions that come from helping others. But allowing people to buy and sell a kidney legally is more likely to increase the number of kidneys available for transplanting than begging and pleading.

The role of incentives plays a critical role in the way that individuals treat their own property relative to the property of others or communal property. People are more likely to change the oil in their own car relative to a rental car. Private farm plots in the former Soviet Union outperformed communal farms there.

The Pilgrims in Plymouth used communal farming their first winter but then after a dismal harvest that first year, moved to a system where there was a more direct incentive other than guilt and honor. Governor Bradford summed it up in his journal:

"And so assigned to every family a parcel of land, according to the proportion of their number, for that end, only for present use (but made no division for inheritance) and ranged all boys and youth under some family. This had very good success, for it made all hands very industrious, so as much more corn was planted than otherwise would have been by any means the Governor or any other could use, and saved him a great deal of trouble, and gave far better content. The women now went willingly into the field, and took their little ones with them to set corn; which before would allege weakness and inability; whom to have compelled would have been thought great tyranny and oppression."

Not only were all hands more industrious—the incentive to harvest communal corn before it was fully ripe, a problem equivalent to poaching in the case of wildlife, was also eliminated.

Incentives matter. Tangible rewards, monetary or in-kind—as in the case of corn in Plimouth—are very powerful. The focus on monetary incentives creates a straw man—homo economicus, a mercenary who will do anything for a price. I used to tell my students that I would be happy to let them purchase an "A" in my class. The price was the GDP of France. My point was that my price was sufficiently high that it was essentially infinite. But truth be told, I like to think that even an exorbitant bribe would have been unsuccessful.

But even if I would have kept my honor and integrity intact in the face of an enormous bribe, I can imagine a non-monetary price where I would forfeit even my honor. I suspect I would gladly sell a grade or do something else dishonest for much less than the GDP of France if it meant saving the life of one of my children. Properly defined to include non-monetary costs and benefits, perhaps every man really does have his price.

- Russell Roberts is professor of economics at George Mason University and the Features Editor at the Library of Economics and Liberty.

Slavery, Snakes, and Switching: The Role of Incentives in Creating Unintended Consequences

Glen Whitman*

In the developed world, we like to think of slavery as a bad memory. But slavery persists to this day, particularly in some parts of Africa, most notably the Sudan. Raiding parties steal children from their home villages and transport them for sale in slave markets many miles away. In the 1990s, when news of this ongoing tragedy came to the developed world, well-intentioned people formed charitable foundations that raised money for slave redemption—that is, buying people out of slavery.

Did these charitable efforts do any good? Certainly, some people are free now who might otherwise of have lived their whole lives in slavery. But there is strong evidence to suggest that slave redemption made the overall situation worse. As journalist Richard Miniter reported in a 1999 article in the *Atlantic Monthly,* the high prices offered by relatively rich Americans increased the demand for slaves, turned the slave trade into an even more lucrative business, and thereby gave raiders an incentive to conduct even more slave raids. If not for the activities of Western charitable organizations, many of the redeemed slaves might never have been enslaved in the first place!

How did the slave redeemers err? They focused on just one incentive (to release people already in bonds) while ignoring another (to capture more slaves). The sad result was an incentive scheme gone awry.

With just an iota of economics training, most people catch on to the importance of incentives. "Aha! To get people to do what we want, all we have to do is reward the good stuff and punish the bad stuff!" Alas, the world is not so simple. People don't always respond to incentives in the ways you might predict. What distinguishes good economic thinking from bad is recognition of the subtle, creative, and often unforeseen ways that people respond to incentives. Ignoring the complex operation of incentives is a recipe for unintended consequences.

The Bad Assumption of Fixed Behavior

Unless you're careful, it's easy to assume that people will continue doing what they're doing despite changes in the costs and benefits of their choices. The slave redeemers, for instance, implicitly assumed the number of slave raids would remain fixed, despite higher returns from slave trading.

This kind of mistake is not uncommon. Policymakers and policy advocates seem especially vulnerable to the assumption that behavior is fixed. To take just one example, every state of the U.S. has "mandated benefit" laws that require health insurance policies to cover specified conditions and treatments, from cancer to mental illness to acupuncture. There are over 1000 such mandated benefit laws nationwide. Support for these laws is at least partially well-intentioned: healthcare advocates want to make sure people get good medical care. The campaign contributions of medical service providers surely play a role in generating legislative support, of course.

However, insurance companies have to raise premiums to cover the costs of the addition services—and then some customers choose to go uninsured because they can't afford the higher premiums. As a result, they end up with less medical care, not more. The lawmakers who have passed mandated benefits laws and the advocates who lobbied for them apparently didn't realize—or didn't care—that insurance companies and their customers would not keep creating the same number of policies at the same prices.

Switching Effects

New rewards and punishments do not affect only the targeted activity. They can also affect the level of other, related activities. Punishing one "bad" thing can induce people to do more of other bad things; rewarding one "good" thing can induce people to do less of other good things.

For instance, increasing the punishment for the consumption of one illicit drug (such as marijuana) can induce users to increase their consumption of other drugs, both illegal (MDMA, cocaine) and legal (alcohol and tobacco). A survey of doctors who prescribe medical marijuana in California reveals that when patients can use marijuana, it enables them to reduce their use of prescription drugs, over-the- counter sleep aids, alcohol, and cigarettes. Re-exposing them to punishment for their marijuana use would, presumably, push them back to their original drugs of choice.

For a subtler example, consider the effect of mandatory drug testing in schools. Drug testing is intended to reduce all illicit drug use. But some drugs are more easily detected than others. Marijuana can be detected in the human system for longer than other, often harder drugs. Some drugs, including inhalants and ecstasy, are not detected at all by standard drug panels. As a result, drug testing creates an incentive for students seeking a high to consume more dangerous drugs. (However, I do not know of any studies that have searched for this result.)

In short, people often switch from one activity to another in response to changes in their incentives. Policymakers who fail to recognize the possibility of such "switching effects" invite unforeseen, and often unpleasant, results.

Rewarding (or Punishing) the Wrong Thing

For a reward or punishment to be effective, it also must aim at the right target. That's not as easy as it sounds. S. E. Rhoads, in his book The Economist's View of the World, tells the story of the Italian town of Abruzzi, which had a problem with too many vipers. To motivate citizens to kill vipers, the town fathers created a viper bounty to be paid for dead vipers. "Alas, the supply of vipers increased. Townspeople had started breeding them in their basements" (p. 58). The problem, of course, is that the town fathers rewarded the wrong thing. What they wanted was not more dead vipers, but fewer vipers in the first place.

Abruzzi's story may be apocryphal, but its mistake is not. Consider the case of gun buy-back programs. These programs aim to reduce the number of guns on the streets by having authorities buy them up. Cities with gun buy-back programs tout their success by announcing the number of guns purchased. It's possible, however, that people will bring guns to town just for the purpose of selling them—after all, if the city paid less than the market price, gun owners would sell their guns privately. The real question is not how many guns are *purchased,* but how many guns *remain on the street.* And this is setting aside the difficult question of whether reducing the number of guns actually reduces violent crime. Since criminals presumably have the greatest need for guns—their livelihoods depend on them—they are probably the least likely to sell them.

It's easy to make fun of government, but private actors are not immune to using incentives in ineffective ways. Take the famous case of Lincoln Electric, a firm that had experienced great success in using piece- rates (instead of wages per hour) to motivate workers who made arc welders. Incentive pay for the production line employees worked so well, in fact, that the firm extended the policy by compensating secretaries based on their number of keystrokes. Eventually management discovered that a secretary had spent her lunch hour typing one key continuously. Private businesses do make mistakes, but at least they have a bottom line incentive to fix them. Lincoln Electric eventually rescinded the keystroke compensation plan. Gun buyback programs remain popular.

In a classic article, Steven Kerr reflects "On the Folly of Rewarding A, While Hoping for B." Kerr discusses a wide range of policies that do just that, in areas ranging from government to business to medicine and sports. Improperly targeted rewards and punishments abound. In some cases they are unavoidable, because the things we really want to affect are difficult to observe and measure. But awareness of the problem is the first step toward fixing it—or avoiding it in the first place.

The Many Margins of Choice

Another source of unintended consequences is the failure to recognize the complexity of economic life. People have a wide array of options for changing their behavior, and that fact can stymie attempts to predict exactly how they will respond to new incentives.

Yoram Barzel offers the instructive story of government price caps on gasoline in the 1970s. A simple economic analysis (familiar to most students of introductory economics) says that price caps will lead to shortages, because consumers will demand more gasoline while suppliers of gasoline reduce the amount they are willing to sell. And indeed, shortages did emerge in 1970s, resulting in long lines at the gas pump. But that was not the end of the story. Barzel notes a plethora of other effects of the price caps: octane levels of gasoline fell (it's less costly to produce lower octane gas), gas stations reduced their hours of operation, full-service stations switched to self-service, and so on. In some cases, service stations offered "free" tanks of gasoline with lube jobs—remarkably pricy lube jobs, of course. The price of the lube job included the true price of gasoline, and buying a lube job allowed customers to jump the queue. Says Barzel, "At no previous time in history had automobiles been so well lubricated" (p. 30).

The key insight—which applies to all kinds of goods and services, not merely gasoline—is that people do not only make choices about prices and quantities. There are many, many margins of choice that people can exploit to improve their situations and to evade regulations.

If you stare at a supply-and-demand graph, it's easy to imagine that the products in question—gallons of gasoline, doctor visits, back massages, or what have you—are easily defined entities with well-known and immutable features. In reality, any good or service consists of a bundle of characteristics. There are gasoline with various octane levels and fuel additives; apartments with various levels of maintenance and amenities; back rubs of various lengths and intensities. All of these margins can be adjusted.

Likewise, the prices paid by consumers might appear to be simply defined amounts of dollars and cents. In fact, consumers pay for their purchases with a bundle of sacrifices: money paid directly to sellers, money paid indirectly in the form of agency fees and bribes, effort spent searching, and time spent waiting. These margins, too, can be adjusted in response to changing conditions.

As a result, policymakers can find it difficult, if not impossible, to escape market forces. Policies that force down the official price of a good or service trigger responses that push down quality, push up other aspects of the price (such as bribes), or both.

The important lesson for policymakers is that regulations will almost always have unintended consequences, because creative people continually find ways to exploit margins of choice that were not considered by the regulators. Take, for instance, the case of rent controls designed to make apartments more affordable. That such controls have led to a shortage of apartment housing in places like New York City is no surprise. More interesting is that the meaning of "apartment housing" has also changed. Landlords have reduced the maintenance level of buildings while cutting back on amenities such as free utilities, parking, and built-in appliances, thereby reducing the cost of providing the units. Meanwhile, customers pay for housing with more than just their rent checks; they also must pay "key fees," bribes to resident managers, and exorbitant commissions to rental agencies just for the opportunity to view rentcontrolled apartments. In short, people have dealt with housing regulations by adjusting the characteristics of both the product provided and the price paid.

Getting It Right, or Not Getting It Wrong

A person with little or no economics training often ignores incentives entirely, by treating people like robots who just respond to their programming. They keep on doing what they're doing, however much we alter their surroundings. A lousy economist regards people as more sophisticated robots. They change their behavior in response to changes in their incentives, but only in specified and highly predictable ways. A good economist realizes that human beings are imaginative and clever. They change their behavior in response to incentives in both predictable and unpredictable ways, constantly seeking to improve their lives in light of new conditions. Failure to recognize this aspect of human nature makes us vulnerable to all manner of errors, in our businesses, personal lives, charitable efforts, and government policies.

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Performance of Public Enterprise in Nepal: A Case Study of Nepal Airline Corporation and Hetauda Cement Industries

NAC (Nepal Airline Corporation), one of the 36 existing PE of Nepal has been facing problems of corruption, political intervention, nepotism, impunity, labor issue and operational inefficiency. NAC is often blamed for management failure and excessive flight cancellation. Between 2004 and 2012, NAC suffered an average loss of Rs.21.91 million per year. Without any reform measure being undertaken, NAC will never recover its cumulative loss figures, therefore increasing the financial burden to the government. While in contrast, the most successful domestic airline (Buddha Air) catered to more than 50% of total domestic passengers and also netted over 50% of total profits in the year 2012.

In addition to NAC's misery, the European Union (EU) has banned Nepalese airlines in its skies. NAC being the only flyer in international skies (other than Buddha Air's flight to Varanasi), has an image of being unsafe under international aviation safety standards. This has had serious negative impacts on the image of the national flag carrier.

Another poorly performing PE is HCI (Hetauda Cement Industries). The report of the eighth annual general meeting of HCIL (Hetauda Cement Industries Limited) puts forward reasons like labor issues, lack of technical expertise, and power crisis for their dismal performance as opposed to its production capacity.

Although the financial position (profit/loss) of HCIL from 2004 to 2012 has shown mixed results with most of the years ending in profit, it still has a large amount of cumulative loss. During the review period, HCIL made an average net profit of Rs.416.28 lakhs. At this rate it would take HCIL another 15.4 years, only to write off the cumulative losses, under the current operational model.

Compared to the industry average from 2004 to 2012, HCL's performance is also below industry average in terms of capacity utilization. While the industry average stands at 47.5 percentage, HCL's capacity utilization is around 40 % only.

Jagadamba Cement a private player in the cement industry occupies the largest market share of 12 percent followed by Vishwakarma Cement, which has market share of 10% while Hetuada Cement occupies four percent of the market share. In terms of employment, the private cement industries employ around 10963 people, which is 91.26% of the total employment in the cement market while Hetauda employs 548 people, which is 4.6% of the total individuals employed in the cement factories in Nepal.

Note: *If you want to read more about why public enterprises perform poorly in Nepal, refer to our study "Analysis of the Performance of Public Enterprises".*

If you want to learn more on how some of the sick public enterprises run by the government of Nepal could be reformed, refer to the follow-up to the previous study at "Policy Options for Public Enterprises Reform in Nepal: A Look at Two Public Enterprises".