Freakonomics

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Harper Collins 2005

1 What Do Schoolteachers and Sumo Wrestlers Have in Common?

Imagine for a moment that you are the manager of a day-care center. You have a clearly stated policy that children are supposed to be picked up by 4 p.m. But very often parents are late. The result: at day's end, you have some anxious children and at least one teacher who must wait around for the parents to arrive. What to do?

A pair of economists who heard of this dilemma—it turned out to be a rather common one—offered a solution: fine the tardy parents. Why, after all, should the day-care center take care of these kids for free?

The economists decided to test their solution by conducting a study of ten day-care centers in Haifa, Israel. The study lasted twenty weeks, but the fine was not introduced immediately. For the first four weeks, the economists simply kept track of the number of parents who came late; there were, on average, eight late pickups per week per day-care center. In the fifth week, the fine was enacted. It was announced that any parent arriving more than ten minutes late would pay $3 per child for each incident. The fee would be added to the parents' monthly bill, which was roughly $380.

After the fine was enacted, the number of late pickups promptly went . . . up. Before long there were twenty late pickups per week, more than double the original average. The incentive had plainly backfired.

Economics is, at root, the study of incentives: how people get what they want, or need, especially when other people want or need the same thing. Economists love incentives. They love to dream them up and enact them, study them and tinker with them. The typical economist believes the world has not yet invented a problem that he cannot fix if given a free hand to design the proper incentive scheme. His solution may not always be pretty—it may involve coercion or exorbitant penalties or the violation of civil liberties—but the original problem, rest assured, will be fixed. An incentive is a bullet, a lever, a key: an often tiny object with astonishing power to change a situation.

We all learn to respond to incentives, negative and positive, from the outset of life. If you toddle over to the hot stove and touch it, you burn a finger. But if you bring home straight A's from school, you get a new bike. If you are spotted picking your nose in class, you get ridiculed. But if you make the basketball team, you move up the social ladder. If you break curfew, you get grounded. But if you ace your SATs, you get to go to a good college. If you flunk out of law school, you have to go to work at your father's insurance company. But if you perform so well that a rival company comes calling, you become a vice president and no longer have to work for your father. If you become so excited about your new vice president job that you drive home at eighty mph, you get pulled over by the police and fined $100. But if you hit your sales projections and collect a year-end bonus, you not only aren't worried about the $100 ticket but can also afford to buy

that Viking range you've always wanted—and on which your toddler can now burn her own finger.

An incentive is simply a means of urging people to do more of a good thing and less of a bad thing. But most incentives don't come about organically. Someone—an economist or a politician or a parent—has to invent them. Your three-year-old eats all her vegetables for a week? She wins a trip to the toy store. A big steelmaker belches too much smoke into the air? The company is fined for each cubic foot of pollutants over the legal limit. Too many Americans aren't paying their share of income tax? It was the economist Milton Friedman who helped come up with a solution to this one: automatic tax withholding from employees' paychecks.

There are three basic flavors of incentive: economic, social, and moral. Very often a single incentive scheme will include all three varieties. Think about the anti-smoking campaign of recent years. The addition of a $3-per-pack "sin tax" is a strong economic incentive against buying cigarettes. The banning of cigarettes in restaurants and bars is a powerful social incentive. And when the U.S. government asserts that terrorists raise money by selling black-market cigarettes, that acts as a rather jarring moral incentive.

Some of the most compelling incentives yet invented have been put in place to deter crime. Considering this fact, it might be worthwhile to take a familiar question—why is there so much crime in modern society?—and stand it on its head: why isn't there a lot *more* crime?

After all, every one of us regularly passes up opportunities to maim, steal, and defraud. The chance of going to jail—thereby losing your job, your house, and your freedom, all of which are essentially economic penalties—is certainly a strong incentive. But when it comes to crime, people also respond to moral incentives (they don't want to do something they consider wrong) and social incentives (they don't want to be seen by others as doing something wrong). For certain types of misbehavior, social incentives are terribly powerful. In an echo of Hester Prynne's scarlet letter, many American cities now fight prostitution with a "shaming" offensive, posting pictures of convicted johns (and prostitutes) on websites or on local-access television. Which is a more horrifying deterrent: a $500 fine for soliciting a prostitute or the thought of your friends and family ogling you on www.HookersAndJohns.com.

So through a complicated, haphazard, and constantly readjusted web of economic, social, and moral incentives, modern society does its best to militate against crime. Some people would argue that we don't do a very good job. But taking the long view, that is clearly not true. Consider the historical trend in homicide (not including wars), which is both the most reliably measured crime and the best barometer of a society's overall crime rate. These statistics, compiled by the criminologist Manuel Eisner, track the historical homicide levels in five European regions.

HOMICIDES

(per 100,000 People)

	England	Netherlands and Belgium	Scandinavia	Germany and Switzerland	Italy
3th and 14th c.	23.0	47.0	n.a.	37.0	56.0
5th c.	n.a.	45.0	46.0	16.0	73.0
6th c.	7.0	25.0	21.0	11.0	47.0
7th c.	5.0	7.5	18.0	7.0	32.0
8th c.	1.5	5.5	1.9	7.5	10.5
9th c.	1.7	1.6	1.1	2.8	12.6
900–1949	0.8	1.5	0.7	1.7	3.2
950–1994	0.9	0.9	0.9	1.0	1.5

The steep decline of these numbers over the centuries suggests that, for one of the gravest human concerns—getting murdered—the incentives that we collectively cook up are working better and better.

So what was wrong with the incentive at the Israeli day-care centers?

You have probably already guessed that the $3 fine was simply too small. For that price, a parent with one child could afford to be late every day and only pay an extra $60 each month—just one-sixth of the base fee. As babysitting goes, that's pretty cheap. What if the fine had been set at $100 instead of $3? That would have likely put an end to the late pickups, though it would have also engendered plenty of ill will. (Any incentive is inherently a trade-off; the trick is to balance the extremes.)

But there was another problem with the day-care center fine. It substituted an economic incentive (the $3 penalty) for a moral incentive (the guilt that parents were supposed to feel when they came late). For just a few dollars each day, parents could buy off their guilt. Furthermore, the small size of the fine sent a signal to the parents that late pickups weren't such a big problem. If the day-care center suffers only $3 worth of pain for each late pickup, why bother to cut short the tennis game? Indeed, when the economists eliminated the $3 fine in the seventeenth week of their study, the number of late-arriving parents didn't change. Now they could arrive late, pay no fine, *and* feel no guilt.

Such is the strange and powerful nature of incentives. A slight tweak can produce drastic and often unforeseen results. Thomas Jefferson noted this while reflecting on the tiny incentive that led to the Boston Tea Party and, in turn, the American Revolution: "So inscrutable is the arrangement of causes and consequences in this world that a two-penny duty on tea, unjustly imposed in a sequestered part of it, changes the condition of all its inhabitants."

In the 1970s, researchers conducted a study that, like the Israeli day-care study, pitted a moral incentive against an economic incentive. In this case, they wanted to learn about the motivation behind blood donations. Their discovery: when people are given a small stipend for donating blood rather than simply being praised for their altruism, they tend to donate *less* blood. The stipend turned a noble act of charity into a painful way to make a few dollars, and it wasn't worth it.

What if the blood donors had been offered an incentive of $50, or $500, or $5,000? Surely the number of donors would have changed dramatically.

But something else would have changed dramatically as well, for every incentive has its dark side. If a pint of blood were suddenly worth $5,000, you can be sure that plenty of people would take note. They might literally steal blood at knifepoint. They might pass off pig blood as their own. They might circumvent donation limits by using fake IDs. Whatever the incentive, whatever the situation, dishonest people will try to gain an advantage by whatever means necessary.

Or, as W. C. Fields once said: a thing worth having is a thing worth cheating for.

blowers did not name as either corrupt or clean, the results were nearly as skewed as when two corrupt wrestlers met—suggesting that most wrestlers who *weren't* specifically named were also corrupt.

So if sumo wrestlers, schoolteachers, and day-care parents all cheat, are we to assume that mankind is innately and universally corrupt? And if so, how corrupt?

The answer may lie in . . . bagels. Consider the true story of a man named Paul Feldman.

Once upon a time, Feldman dreamed big dreams. Trained as an agricultural economist, he wanted to tackle world hunger. Instead, he took a job in Washington, analyzing weapons expenditures for the U.S. Navy. This was in 1962. For the next twenty-odd years, he did more of the same. He held senior-level jobs and earned good money, but he wasn't fully engaged in his work. At the office Christmas party, colleagues would introduce him to their wives not as "the head of the public research group" (which he was) but as "the guy who brings in the bagels."

The bagels had begun as a casual gesture: a boss treating his employees whenever they won a research contract. Then he made it a habit. Every Friday, he would bring in some bagels, a serrated knife, and cream cheese. When employees from neighboring floors heard about the bagels, they wanted some too. Eventually he was bringing in fifteen dozen bagels a week. In order to recoup his costs, he set out a cash basket and a sign with the suggested price. His collection rate was about 95 percent; he attributed the underpayment to oversight, not fraud.

In 1984, when his research institute fell under new management, Feldman took a look at his career and grimaced. He decided to quit his job and sell bagels. His economist friends thought he had lost his mind, but his wife supported him. The last of their three children was finishing college, and they had retired their mortgage.

Driving around the office parks that encircle Washington, he solicited customers with a simple pitch: early in the morning, he would deliver some bagels and a cash basket to a company's snack room; he would return before lunch to pick up the money and the leftovers. It was an honor-system commerce scheme, and it worked. Within a few years, Feldman was delivering 8,400 bagels a week to 140 companies and earning as much as he had ever made as a research analyst. He had thrown off the shackles of cubicle life and made himself happy.

He had also—quite without meaning to—designed a beautiful economic experiment. From the beginning, Feldman kept rigorous data on his business. So by measuring the money collected against the bagels taken, he found it possible to tell, down to the penny, just how honest his customers were. Did they steal from him? If so, what were the characteristics of a company that stole versus a company that did not? Under what circumstances did people tend to steal more, or less?

As it happens, Feldman's accidental study provides a window onto a form of cheating that has long stymied academics: white-collar crime. (Yes, shorting the bagel man is white-collar crime, writ however small.) It might seem ludicrous to address as large and intractable a problem as white-collar crime through the life of a bagel man. But often a small and simple question can help chisel away at the biggest problems.

Despite all the attention paid to rogue companies like Enron, academics know very little about the practicalities of white-collar crime. The reason? There are no good data. A key fact of white-collar crime is that we hear about only the very slim fraction of people who are *caught* cheating. Most embezzlers lead quiet and theoretically happy lives; employees who steal company property are rarely detected.

With street crime, meanwhile, that is not the case. A mugging or a

burglary or a murder is usually tallied whether or not the criminal is caught. A street crime has a victim, who typically reports the crime to the police, who generate data, which in turn generate thousands of academic papers by criminologists, sociologists, and economists. But white-collar crime presents no obvious victim. From whom, exactly, did the masters of Enron steal? And how can you measure something if you don't know to whom it happened, or with what frequency, or in what magnitude?

Paul Feldman's bagel business was different. It did present a victim. The victim was Paul Feldman.

When he started his business, he expected a 95 percent payment rate, based on the experience at his own office. But just as crime tends to be low on a street where a police car is parked, the 95 percent rate was artificially high: Feldman's presence had deterred theft. Not only that, but those bagel eaters knew the provider and had feelings (presumably good ones) about him. A broad swath of psychological and economic research has shown that people will pay different amounts for the same item depending on who is providing it. The economist Richard Thaler, in his 1985 "Beer on the Beach" study, showed that a thirsty sunbather would pay $2.65 for a beer delivered from a resort hotel but only $1.50 for the same beer if it came from a shabby grocery store.

In the real world, Feldman learned to settle for less than 95 percent. He came to consider a company "honest" if its payment rate was above 90 percent. He considered a rate between 80 and 90 percent "annoying but tolerable." If a company habitually paid below 80 percent, Feldman might post a hectoring note, like this one:

> The cost of bagels has gone up dramatically since the beginning of the year. Unfortunately, the number of bagels that disappear

without being paid for has also gone up. Don't let that continue. I don't imagine that you would teach your children to cheat, so why do it yourselves?

In the beginning, Feldman left behind an open basket for the cash, but too often the money vanished. Then he tried a coffee can with a money slot in its plastic lid, which also proved too tempting. In the end, he resorted to making small plywood boxes with a slot cut into the top. The wooden box has worked well. Each year he drops off about seven thousand boxes and loses, on average, just one to theft. This is an intriguing statistic: the same people who routinely steal more than 10 percent of his bagels almost never stoop to stealing his money box—a tribute to the nuanced social calculus of theft. From Feldman's perspective, an office worker who eats a bagel without paying is committing a crime; the office worker probably doesn't think so. This distinction probably has less to do with the admittedly small amount of money involved (Feldman's bagels cost one dollar each, cream cheese included) than with the context of the "crime." The same office worker who fails to pay for his bagel might also help himself to a long slurp of soda while filling a glass in a self-serve restaurant, but he is very unlikely to leave the restaurant without paying.

So what do the bagel data have to say? In recent years, there have been two noteworthy trends in the overall payment rate. The first was a long, slow decline that began in 1992. By the summer of 2001, the overall rate had slipped to about 87 percent. But immediately after September 11 of that year, the rate spiked a full 2 percent and hasn't slipped much since. (If a 2 percent gain in payment doesn't sound like much, think of it this way: the nonpayment rate fell from 13 to 11 percent, which amounts to a 15 percent decline in theft.) Because many of Feldman's customers are affiliated with national security, there may have been a patriotic element to this 9/11 Effect. Or it may have represented a more general surge in empathy.

The data also show that smaller offices are more honest than big ones. An office with a few dozen employees generally outpays by 3 to 5 percent an office with a few hundred employees. This may seem counterintuitive. In a bigger office, a bigger crowd is bound to convene around the bagel table, providing more witnesses to make sure you drop your money in the box. But in the big-office/small-office comparison, bagel crime seems to mirror street crime. There is far less street crime per capita in rural areas than in cities, in large part because a rural criminal is more likely to be known (and therefore caught). Also, a smaller community tends to exert greater social incentives against crime, the main one being shame.

The bagel data also reflect how much personal mood seems to affect honesty. Weather, for instance, is a major factor. Unseasonably pleasant weather inspires people to pay at a higher rate. Unseasonably cold weather, meanwhile, makes people cheat prolifically; so do heavy rain and wind. Worst are the holidays. The week of Christmas produces a 2 percent drop in payment rates—again, a 15 percent increase in theft, an effect on the same magnitude, in reverse, as that of 9/11. Thanksgiving is nearly as bad; the week of Valentine's Day is also lousy, as is the week straddling April 15. There are, however, a few good holidays: the weeks that include the Fourth of July, Labor Day, and Columbus Day. The difference in the two sets of holidays? The low-cheating holidays represent little more than an extra day off from work. The high-cheating holidays are fraught with miscellaneous anxieties and the high expectations of loved ones.

Feldman has also reached some of his own conclusions about honesty, based more on his experience than the data. He has come to believe that morale is a big factor—that an office is more honest when the employees like their boss and their work. He also believes that employees further up the corporate ladder cheat more than those down below. He got this idea after delivering for years to one company spread out over three floors—an executive floor on top and two lower floors with sales, service, and administrative employees. (Feldman wondered if perhaps the executives cheated out of an overdeveloped sense of entitlement. What he didn't consider is that perhaps cheating was how they got to *be* executives.)

If morality represents the way we would like the world to work and economics represents how it actually does work, then the story of Feldman's bagel business lies at the very intersection of morality and economics. Yes, a lot of people steal from him, but the vast majority, even though no one is watching over them, do not. This outcome may surprise some people—including Feldman's economist friends, who counseled him twenty years ago that his honor-system scheme would never work. But it would not have surprised Adam Smith. In fact, the theme of Smith's first book, *The Theory of Moral Sentiments*, was the innate honesty of mankind. "How selfish soever man may be supposed," Smith wrote, "there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it."

There is a tale, "The Ring of Gyges," that Feldman sometimes tells his economist friends. It comes from Plato's *Republic*. A student named Glaucon offered the story in response to a lesson by Socrates—who, like Adam Smith, argued that people are generally good even without enforcement. Glaucon, like Feldman's economist friends, disagreed. He told of a shepherd named Gyges who stumbled upon a secret cavern with a corpse inside that wore a ring. When Gyges put on the ring, he found that it made him invisible. With no one able to

monitor his behavior, Gyges proceeded to do woeful things—seduce the queen, murder the king, and so on. Glaucon's story posed a moral question: could any man resist the temptation of evil if he knew his acts could not be witnessed? Glaucon seemed to think the answer was no. But Paul Feldman sides with Socrates and Adam Smith—for he knows that the answer, at least 87 percent of the time, is yes.