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What Seems Fair?

Danny and Jack invited me to join them in a project they had recently started that was closely related to my "beer on the beach" question, which investigated what makes an economic transaction seem like a "good deal" (i.e., what makes people willing to pay more for a beer purchased at a fancy resort than at a rundown shack). The topic Danny and Jack had begun to study was: what makes an economic transaction seem "fair"? Someone might resist paying as much for a beer sold at a shack as for one sold at a fancy resort because, in his or her mind, it's not fair for the shack owner to be charging such a high price.

This project was made possible by an arrangement Jack Knetsch had made with the Canadian government, which gave us access to free telephone polling. Apparently there was a program that was training the unemployed to be telephone interviewers, whatever that entails, and they needed questions for the trainees to ask. If we faxed a bunch of questions each Monday morning, they would fax us back the responses Thursday night. That gave us Friday and the weekend to figure out what we had learned from the week's questions and to write some new ones for the following week. Today this sort of research can be done online using services like Amazon's "Mechanical Turk," but back then weekly access to a random sample of a few hundred residents of Ontario (and later British Columbia) was an incredible luxury. We were able to try out lots of ideas, get quick feedback, and learn in the best possible way: theory-driven intuition tested by trial and error.

Here is an example of the kind of question we were asking:

> A hardware store has been selling snow shovels for $15. The morning after a large snowstorm, the store raises the price to $20.
> Rate this action as: Completely fair, acceptable, somewhat unfair, or very unfair.

We decided to simplify the presentation of the data by combining the first two answers and calling them "acceptable," and the last two, which we labeled "unfair." Here were the responses for this question (each question had about 100 respondents):

Acceptable 18% Unfair 82%

Now, you might be saying, "Duh! What kind of jerk would raise the price of snow shovels the morning after a snowstorm?" But raising the price is exactly what economic theory says will and *should* happen! This easily could be a question from a basic economics course in business school. "There is a fixed supply of snow shovels, and a sudden increase in demand. What will happen to the price?" In that class, the correct answer is to say that the price will go up enough so that everyone who is willing to pay that price will get one. Raising the price is the only way to assure that the snow shovels will end up being owned by those who value them most (as measured by their willingness to pay).

One of the things MBAs learn in business school is to think like an Econ, but they also forget what it is like to think like a Human. This is another example of Kahneman's notion of theory-induced blindness. Indeed, when I posed the snow shovel fairness question to my MBA students, their responses were in accord with standard economic theory:

Acceptable 76% Unfair 24%

Ours was a purely descriptive exercise. We did not intend to be moral philosophers or to render judgment about what "is" or "should be" fair. Instead, we were trying to do what you might call experimental philosophy. We were trying to learn what ordinary citizens, albeit Canadians, think is fair. More specifically, we were trying to learn what actions by firms make people angry. It turns out that raising the price of snow shovels after a blizzard really pisses people off. There is even a name for this practice: gouging. The usual definition of "gouge" is "to make a hole or groove with a sharp instrument." When a store raises the price of snow shovels the day after a blizzard, people feel very much like someone has poked them with a sharp object. And indeed, in many places there are laws against gouging, suggesting that people find the practice offensive. We wanted to figure out what other business practices Humans hate.

Any polling question that produced something interesting would be run again using different variations to make sure there was nothing special about, say, snow shovels. Here is another example, inspired by my three-year-old daughter Jessie and her ever-present doll Joey. Joey was no ordinary doll; he was a Cabbage Patch doll, which for reasons mysterious to me but obvious to many young girls had become a fad among the preschool set. By Christmastime, there were no Cabbage Patch dolls to be found anywhere, and many parents were desperate. Thus, this item:

> A store has been sold out of the popular Cabbage Patch dolls for a month. A week before Christmas a single doll is discovered in a storeroom. The managers know that many customers would like to buy the doll. They announce over the store's public address system that the doll will be sold by auction to the customer who offers to pay the most.

Acceptable 26% Unfair 74%

This answer raises an interesting follow-up question: what is it that makes the auction unpopular? Is it that the doll will go to someone affluent enough to win the auction, or is it that the store owner has opted to extract every possible penny from a desperate parent with a toddler waiting anxiously for Christmas Eve?

To find out, we asked the same question to another group of respondents but added one extra sentence stating that the proceeds will be donated to UNICEF. That yielded an acceptable rating of 79%. Auctioning a doll is fine if the proceeds go to charity, unless the "charity" is the owner's wallet.

Even this conclusion has to be tempered. In another scenario, we said that a small town was suffering from a flu epidemic, and there was only one package of medicine remaining. Would it be fair for the pharmacist to auction off the medicine? Of course people hated the auction, but in this case they hated it even if the money went to charity. People understand that many luxuries are only available to the affluent. But, at least for most people, health care occupies a different category. Most European countries (as well as Canada) provide health care to their citizens as a basic right, and even in America, where this view is resisted in certain quarters, we do not turn uninsured accident victims away at the emergency room. Similarly, no country permits a free market in organs, although Iran does have a market for

kidneys. For most of the world, the idea that a rich person who needs a kidney should be allowed to pay a poor person to donate one is considered "repugnant," to use the word favored by economist Alvin Roth to describe such market transactions.

In many situations, the perceived fairness of an action depends not only on who it helps or harms, but also on how it is framed. To test these kinds of effects, we would ask two versions of a question to different groups of respondents. For example, consider this pair of questions, with the differences highlighted in italics:

> A shortage has developed for a popular model of automobile, and customers must now wait two months for delivery. *A dealer has been selling these cars at list price. Now the dealer prices this model at $200 above list price.*
>
> Acceptable 29% Unfair 71%

> A shortage has developed for a popular model of automobile, and customers must now wait two months for delivery. *A dealer has been selling these cars at a discount of $200 below list price. Now the dealer sells this model only at list price.*
>
> Acceptable 58% Unfair 42%

This pair of questions illustrates a useful point that came up in our discussion in chapter 2 of merchants imposing surcharges for using a credit card. Any firm should establish the highest price it intends to charge as the "regular" price, with any deviations from that price called "sales" or "discounts." Removing a discount is not nearly as objectionable as adding a surcharge.

One principle that emerged from our research is that perceptions of fairness are related to the endowment effect. Both buyers and sellers feel entitled to the terms of trade to which they have become accustomed, and treat any deterioration of those terms as a loss. This feeling of ownership of the usual conditions of sale is particularly true when a seller starts to charge for something that has traditionally been given away for free or included in the price. In this way, the status quo becomes a reference point. If restaurants started charging extra to be able to sit down while you eat, that would be violating the existing norm that dinner meals include a chair, although it does not have to be comfortable. Nevertheless, citizens think that firms and employers are entitled to make a (reasonable) profit. Firms are not expected to give away their products. One implication is that raising prices because costs have increased is almost always judged to be fair.

Perceptions of fairness also help explain a long-standing puzzle in economics: in recessions, why don't wages fall enough to keep everyone employed? In a land of Econs, when the economy goes into a recession and firms face a drop in the demand for their goods and services, their first reaction would not be to simply lay off employees. The theory of equilibrium says that when the demand for something falls, in this case labor, prices should also fall enough for supply to equal demand. So we would expect to see that firms would reduce wages when the economy tanks, allowing them to also cut the price of their products and still make a profit. But this is not what we see: wages and salaries appear to be sticky. When a recession hits, either wages do not fall at all or they fall too little to keep everyone employed. Why?

One partial explanation for this fact is that cutting wages makes workers so angry that firms find it better to keep pay levels fixed and just lay off surplus employees (who are then not around to complain). It turns out, however, that with the help of some inflation, it is possible to reduce "real" wages (that is, adjusted for inflation) with much less pushback from workers. The next pair of questions illustrates this point.

A company is making a small profit. It is located in a community experiencing a recession with substantial unemployment but no inflation. There are many workers anxious to work at the company. The company decides to decrease wages and salaries by 7% this year.

Acceptable 38% Unfair 62%

A small company is making a small profit. It is located in a community experiencing a recession with substantial unemployment *and inflation of 12%*. The company decides to *increase salaries only 5% this year*.

Acceptable 78% Unfair 22%

Notice that the spending power of the employees is the same for the two versions of the problem, but the reactions are quite different. An actual cut in the nominal wage is viewed as a loss and is therefore unfair, whereas failing to keep up with inflation is judged acceptable since the nominal wage is still going up. This is one of many reasons why some economists (including me) felt that central banks should have been willing to tolerate a bit more inflation after the financial crisis. Even 3% inflation might have allowed firms to effectively cut real wages enough to speed the jobs recovery that has been so slow in most of the world.

Of course, it is one thing to discover what actions by firms make people angry, and it is quite another to ask whether firms obey these fairness norms. I do not know of any systematic study of this question, but I suspect that most successful firms intuitively understand the norms we uncovered and at least try to avoid giving the appearance of behaving unfairly.

The value of seeming fair should be especially high for firms that plan to be in business selling to the same customers for a long time, since those firms have more to lose from seeming to act unfairly. In fact, after a hurricane, the cheapest place in the country to buy plywood is often the area that has been hardest hit. For example, after Hurricane Katrina devastated New Orleans, Home Depot and other chains loaded up trucks with emergency supplies of food and bottled water to give away. At the same time, such a natural disaster will induce some entrepreneurial folks to load a truck with plywood in a nearby city and sell it in the devastated areas for whatever price it will fetch. In this case, both sellers are profit-maximizing. The chain store is establishing a reputation for fair dealing that will have long-term payoffs, whereas the “temporary entrepreneurs” will be back home in a couple days with a tidy profit and either a slightly guilty conscience or pride in their efforts to help improve the allocation of scarce resources, depending on their point of view.

But firms don’t always get these things right. The fact that my MBA students think it is perfectly fine to raise the price of snow shovels after a blizzard should be a warning to all business executives that their intuitions about what seems fair to their customers and employees might need some fine-tuning.

Consider the case of an initiative taken by First Chicago in the mid-1990s, when it was the largest bank in the Chicago metropolitan area. Top management was concerned that the retail banking division was not making enough profits. To trim costs, they decided to encourage customers to make greater use of recently introduced automatic teller machines (ATMs). Although most people had become comfortable taking money out of such a machine, some customers were reluctant to use an ATM to deposit checks. Instead, they would go to a teller

for that service, and full-fledged technophobes continued to go to the teller to get cash (and perhaps chat with a favorite teller). The bank decided to give customers an incentive to switch to ATMs by charging three dollars to use a teller for a transaction that could be done at an ATM.

The bank was proud of this innovation and announced it with great fanfare, along with a new lineup of checking account options. The public reaction was immediate and fierce. A local paper's front-page headline read: "FIRST CHICAGO LOSES TOUCH WITH HUMANS." The story went on to say: "The First National Bank of Chicago today introduced an innovative lineup of checking accounts designed to bring its products up to date with the way customers prefer to bank in the 1990s. And what is it the bank thinks customers prefer in the 1990s? Paying a $3 fee for the privilege of doing business with a bank teller."

The competition was quick to pounce. One bank put a "Free Teller" sign on its branch right off one of the local expressways. Another ran this radio ad:

MAN: I was looking over my bank statement, and I am wondering . . .
TELLER: Is that a question?
MAN: What? Well, yes.
TELLER: Questions are extra—six dollars.
MAN: What?!
TELLER: Nine dollars.

You get the idea. Even the late night comedian Jay Leno picked up on it: "So, if you want to talk to a human, it's three dollars. But the good news is, for $3.95 you can talk dirty to her, so that's okay."

The bank attracted all this bad publicity for a three-dollar fee that very few people would actually pay. Yet it took until December 2002, after First Chicago had been purchased by a national bank, for the new management team to announce that they were abandoning the policy. "We've been presumptuous about our market share here. We haven't done a great job in Chicago."

The CEO of Coca-Cola also discovered the hard way that violating the norms of fairness can backfire. Douglas Ivester, aged fifty-two, appeared to be on his way to the job of chairman when he abruptly resigned after a push from several board members including legendary investor Warren Buffett. Although several actions contributed to his downfall, one speech in Brazil attracted the most attention. At a press conference, Mr. Ivester was asked about tests Coke was running with vending machines that could change price dynamically. He replied: "Coca-Cola is a product whose utility varies from moment to moment. In a final summer championship, when people meet in a stadium to have fun, the utility of a cold Coca-Cola is very high. So it is fair that it should be more expensive. The machine will simply make this process automatic." As the *Wall Street Journal* stated in a story about his downfall, Mr. Ivester seemed to have a "tin ear." An editorial cartoon captured the feelings of the general public perfectly with an image of a customer walking away from a Coke vending machine with a can in his hand, looking back to see an arm reaching out of the machine and picking his pocket.

Firms continue to fail at the basics of business fairness. Consider the case of Whitney Houston, the pop singer who died suddenly on February 11, 2012. It was to be expected that there would be a spike in the demand for her recordings, now largely sold online at sites such as iTunes. How did Apple and Sony (the owner of the recording rights) react to the death? Was this a propitious time to jack up the price?

Someone (or possibly, some pricing algorithm) seemed to think so. About twelve hours after her death, the price of Houston's 1997 album *The Ultimate Collection* increased on the UK iTunes site from £4.99 ($7.86) to £7.99 ($12.58), a 60% increase in price. The price of *Whitney—The Greatest Hits* later increased from £7.99 to £9.99, a 25% increase.

The *Guardian* was the first news organization to break the story. Customer ire was originally directed toward Apple, but later Sony was blamed for the hike. Regardless of who was to blame, fans were outraged. The *Daily Mail* quoted one customer as saying: "To say I am angry is an understatement and I feel it is just a case of iTunes cashing in on the singer's death, which in my opinion is totally parasitic." The anger in this case might have been particularly acute because in the case of online downloads there is no sense in which the albums have become scarce. Unlike snow shovels after a blizzard, iTunes cannot run out of copies of an album to be downloaded.

This story was not widely known in the United States, where prices did not spike, and certainly it did not appear to affect sales in the U.S. According to Nielsen SoundScan, there were 101,000 Whitney Houston albums sold in the U.S. the week after her death (up from 1,700 the week before) and 887,000 individual song downloads (compared to 15,000 the week before). I do not know whether sales in the U.K. were as strong, but even if they were, a price increase may not have been wise. As usual in these cases when demand has suddenly risen, a seller has to trade off short-term gain against possible long-term loss of good will, which can be hard to measure.

A reasonable question to ask at this point is whether firms are always punished for acting "unfairly." Sure, First Chicago got hammered in the media for its three-dollar charge to see a teller, but airlines have been adding fees one after another without appearing to cause irreparable harm to the individual airlines that lead the way, or the industry as a whole. Why not? Airline travelers can't be happy about the new fees for checked baggage, nor the crammed overhead bins that have become the norm since baggage fees were added. In this case, as in many others, the key is what happens after the first mover adds a new fee that might be perceived as unfair. If the competition follows the first mover's lead, then customers may be peeved but have little choice if they must consume the product in question. Had the other major banks in the area followed First Chicago's example and added a teller fee, customers might well have gotten used to the idea and reluctantly accepted it. But any large first mover who takes an action that violates the norms of fairness runs considerable risks if competitors do not follow suit.

My takeaway from these examples is that temporary spikes in demand, from blizzards to rock star deaths, are an especially bad time for any business to appear greedy. (There are no good times to appear greedy.) One prominent new firm that appears to be ignoring this advice is Uber, the innovative smartphone-driven car service that has entered many markets around the world. One feature of Uber's business model is that prices can fluctuate depending on demand. Uber refers to this practice as "surge pricing." When demand is high, for whatever reason, prices go up, and customers requesting a car are notified of the current price multiple. Customers can then choose to accept the higher price, turn it down and seek alternative transportation, or hope that the surge will be short-lived and wait for Uber to notify them that the surge is over. Uber does not make their pricing formulas public, but there have been media reports of surge multiples more than ten times the regular price. Unsurprisingly, multiples this large have led to complaints.

Uber has defended surge pricing on the basis that a higher price will act as an incentive for more drivers to work during peak periods. It is hard to evaluate this argument without seeing internal data on the supply response by drivers, but on the face of it the argument does not seem to be compelling. First of all, you can't just decide on the spur of the moment to become an Uber driver, and even existing drivers who are either at home relaxing or at work on another job have limited ability to jump in their cars and drive when a temporary surge is announced. One indication of the limits on the extent to which the supply of drivers can respond quickly is the very fact that we have seen multiples as high as ten. If thousands of drivers were ready to leap into their cars when a surge is announced, large surges in price

would be fleeting.

Regardless of whether Uber can instantly increase its supply of drivers, the high multiples charged during a blizzard in New York City attracted the attention of the New York State attorney general. (Raising the price of snow shovels is not the only thing that makes people mad during a snowstorm.) It turns out that New York has one of those anti-gouging laws I referred to earlier. Specifically, firms are prohibited from charging "unconscionable excessive prices" during any "abnormal disruption of the market," which can be anything from a storm to a power outage to civil disorder. Note that the language of the law captures some of the emotions people have about this issue. Excessive would seem to be enough, but this law bans *unconscionably* excessive prices.

The State of New York and Uber reached an agreement that in such abnormal disruptions of the market, Uber would limit its surge pricing using a formula. It would first search for the highest multiples charged on four different days during the sixty days that precede the "abnormal disruption." The fourth highest price would then serve as a cap on the surge that could be charged in the emergency period. In addition, Uber voluntarily offered to donate 20% of its additional revenues during these periods to the American Red Cross.

I think it showed bad judgment on the part of Uber management to wait until the attorney general forced them into this concession. If they wanted to establish good long-term relationships with their customers, they should have thought of something like it themselves. Just imagine that Uber existed on September 11, 2001, when the planes struck the World Trade Center. Would it have been a smart move for Uber to have a special "9/11 surge special" of twenty times the usual fare, sending many of the cars in the area off to Greenwich?* This insensitivity to the norms of fairness could be particularly costly to Uber since the company has had to fight political battles in many of the cities it enters. Why create enemies in order to increase profits a few days a year?†

Don't get me wrong. I love Uber as a service. But if I were their consultant, or a shareholder, I would suggest that they simply cap surges to something like a multiple of three times the usual fare. You might wonder where the number three came from. That is my vague impression of the range of prices that one normally sees for products such as hotel rooms and plane tickets that have prices dependent on supply and demand. Furthermore, these services sell out at the most popular times, meaning that the owners are intentionally setting the prices too low during the peak season.

I once asked the owner of a ski lodge why he didn't charge more during the Christmas week holiday, when demand is at a peak and rooms have to be booked nearly a year in advance. At first he didn't understand my question. No one had ever asked why the prices are so *low* during this period when prices are at their highest. But once I explained that I was an economist, he caught on and answered quickly. "If you gouge them at Christmas they won't come back in March." That remains good advice for any business that is interested in building a loyal clientele.

One businessman who understands this lesson better than most is Nick Kokonas, the co-owner, with celebrity chef Grant Achatz, of two of the best restaurants in Chicago: Alinea and Next. The concept at Next is highly original. The menu changes completely three times a year. The themes can vary as widely as a dinner in Paris from 1906, to Thai street food, to an homage to El Bulli, a restaurant in Catalonia, Spain, that was a foodie mecca until it closed in 2011. When Next was scheduled to open in April 2011, they announced that all their meals (as well as those at Alinea) would be sold by tickets, with the ticket prices varying according to the day of the week and the time of day. Following the usual fairness norms, the prices do not vary all that much. The most expensive price, for Saturday night at eight, is only about 25% more than the cheapest time, 9:45 on Wednesday. As a result, the prime-time tables sell out almost immediately (some to customers who buy season tickets to all three meals that

year), and typically the only tables available are at the cheaper off-peak times.

When Next first opened and the excitement was at its peak, two economists from Northwestern University tried to explain to Mr. Kokonas that he was doing this all wrong, and that he should instead have auctioned off each reservation so as to maximize his profits. Kokonas strongly disagreed with this advice, and has a long blog entry explaining why. Here is the key sentence in his blog: "It is incredibly important for any business, no matter how great the demand, not to charge a customer more than the good or service is worth—even if the customer is willing to pay more." He felt that even if someone was willing to pay $2,000 to eat at Next, that customer would leave feeling, "Yeah, that was great but it wasn't worth $2,000." And crucially, Kokonas believes that such a customer will not come back, and may share his disgruntled experience with other potential diners.‡

Kokonas is now offering his online ticket-selling software to other high-end restaurants. It will be interesting to see whether the restaurants that adopt the ticket model also adopt his pricing strategy of "underpricing" the (expensive) tables at peak times. The ones that want to stay in business for the long haul would be well advised to do so.

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* I asked one Uber driver in California how he would feel about surge pricing being applied if there was a wildfire in some town and people had to get out. He said: "In that situation, I would want to offer rides for free!"

† A similar episode occurred in Sydney, Australia, during a hostage crisis in the center of the city. Prices surged, probably based on some algorithm that was not fine-tuned to special circumstances. After online criticism, some Humans at Uber decided to offer free rides and to refund people who had paid (Sullivan, 2014).

‡ Notably, an even larger organization—the NFL—recognizes and ascribes to this same piece of advice. In an interview with economist Alan B. Krueger, the NFL's VP for public relations, Greg Aiello, explained that his organization takes a "long-term strategic view" toward ticket pricing, at least for the Super Bowl. Even though the high demand for Super Bowl tickets might justify significantly higher prices (and short-term profits—he calculates the profit increase as on the same scale as all advertising revenues), the organization intentionally keeps these prices reasonable in order to foster its "ongoing relationship with fans and business associates" (Krueger, 2001).

15

Fairness Games

One question was very much on the minds of Danny, Jack, and me while we were doing our fairness project. Would people be willing to punish a firm that behaves unfairly? Would a customer who was charged $500 for a taxi ride that is normally priced at $50 try to avoid using that service again, even if they liked the service? We designed an experiment in the form of a game to investigate.

One player, the Proposer, is given a sum of money known as the "pie." He is told to offer the other player, called the Responder, the portion of the pie he is willing to share. The Responder can either accept the offer, leaving the remaining amount to the Proposer, or can reject it, in which case both players get nothing.

It was important that this game be played for real money, so we abandoned our telephone polling bureau and did our research with students at the University of British Columbia and Cornell. We devised a very simple way to play the game and get as much data as possible for a given research budget. Players were chosen at random to play the role of Proposer or Responder. Then they filled out a simple form like this one for Responders. In our game the pie was $10.

If you are offered $10 will you accept?	Yes_____	No_____
If you are offered $9.50 will you accept?	Yes_____	No_____
…		
…		
If you are offered $0.50 will you accept?	Yes_____	No_____
If you are offered nothing will you accept?	Yes_____	No_____

We asked the questions in this way because we were worried that many Proposers would offer half, which would not give us much insight into the preferences of the Responders, who were our primary focus.

Using the standard economics assumptions that people are selfish and rational, game theory has a clear prediction for this game. The Proposer will offer the smallest positive amount possible (50 cents in our version) and the Responder will accept, since 50 cents is more than nothing. In contrast, we conjectured that small offers would be rejected as "unfair." That conjecture turned out to be right. Typically, offers that did not exceed 20% of the pie, $2 in our game, were rejected.

We were delighted with this outcome of our cute little game, but we soon discovered that three German economists led by Werner Güth had published a paper on precisely this game three years earlier. They used exactly the same methods and had a snappy name for it: the Ultimatum Game. Danny was crestfallen when he heard this news, worried as always that his current idea would be his last. (This is the same man who would publish a global best-seller

at age seventy-seven.)

Jack and I reassured Danny that he probably still had some good ideas left, and we all pressed on to think of another game to go along with the first one. Our research on this game was conducted in two stages. In the first stage we gave students in a classroom setting the following choice: "You have the opportunity to divide $20 between you and another anonymous student in this class. You have two choices: you can take $18 and give the other student $2, or you can split the money evenly, so that you each get $10." (While everyone made the choice, the subjects were told that only some of them would be selected at random to be paid.) Because the second player is forced to take whatever she is offered, this game has become known as the Dictator Game.

We did not have a strong opinion about how the Dictator Game would come out. Our primary interest was in the second game, let's call it the Punishment Game, in which we went to a different class and told the students there about the Dictator Game experiment. Then we gave students a choice. "You have been paired with two students who played [the Dictator Game] but were not selected to be paid. One, E, divided the money evenly, while the other, U, divided the money unevenly. He took $18 and gave his counterpart $2. You have the following choice. Would you like to evenly split $12 with U or $10 with E?"

Another way to phrase the choice in the Punishment Game is: "Are you willing to give up a dollar to share some money with a student who behaved nicely *to someone else,* rather than share with a student who was greedy in the same situation?" We thought that the Punishment Game, like the Ultimatum Game, would tell us whether people are willing to give something up to punish someone who behaves in a manner they consider "unfair."

Somewhat surprisingly to us (or at least to me), the students in the Dictator stage of our game were remarkably nice. Nearly three quarters (74%) chose to divide the money equally. Of more interest to us, the results of the Punishment stage were even stronger. Fully 81% of the subjects chose to share $10 with a "fair" allocator rather than $12 with an "unfair" allocator.

It is important to stress what should and should not be inferred from the results of both of these experiments. There is clear evidence that people dislike unfair offers and are willing to take a financial hit to punish those who make them. It is less clear that people feel morally obliged to make fair offers. Although it is true that in the Ultimatum Game the most common offer is often 50%, one cannot conclude that Proposers are trying to be fair. Instead, they may be quite rationally worried about being rejected. Given the empirical evidence on respondents' behavior, the profit-maximizing strategy in the Ultimatum Game is for the Proposer to offer about 40% of the pie. Lower offers start to run the risk of being rejected, so a 50% offer is not far from the rational selfish strategy.

Whether the offers made by Proposers are driven by fairness or selfish concerns, the outcomes of the Ultimatum Game appear to be quite robust. Proposers make offers of close to half the pie, and Responders tend to reject offers of less than 20%. The game has been run in locations all around the world, and with the exception of some remote tribes the results are pretty similar. Nevertheless, one question that people have long wondered about is whether the tendency to reject small offers in the Ultimatum Game persists as stakes increase. A natural intuition shared by many is that as the stakes go up, the minimum offer that will be accepted goes down as a fraction of the total pie. That is, if when playing for $10 the average minimally acceptable offer is $2, then when the stakes are raised to $1,000, would people accept less than $200?

Investigating this hypothesis has been plagued by two problems: running a high-stakes version of the Ultimatum Game is expensive, and most Proposers make "fair" offers. Experimenters in the United States ran a version of the Ultimatum Game for $100, and the results did not differ much from lower-stakes games. Even more telling is evidence from

running the game in poor countries, where the cost of living allows experimenters to raise the stakes even higher. For example, Lisa Cameron ran Ultimatum Game experiments in Java using both low stakes and truly high stakes (approximately three months' income for the subjects). She found virtually no difference in the behavior of Proposers when she raised the stakes.

There is another class of games that takes up the question of whether people are purely selfish (at least when dealing with strangers), as Econs are presumed to be. These are games about cooperation. The classic game of this variety is the well-known Prisoner's Dilemma. In the original setup, there are two prisoners who have been arrested for committing some crime and are being held and interrogated separately. They each have a choice: they can confess their crime or remain silent. If they both remain silent, the police can only convict them of a minor offense with a sentence of one year. If they both confess, they each get five years in jail. But if one confesses and the other stays silent, the confessor gets out of jail free while the other serves ten years in jail.

In the more general version of this game without the prisoner cover story, there are two strategies, cooperate (stay silent) or defect (confess). The game theoretic prediction is that both players will defect because, no matter what the other player does, it is in the selfish best interest of each player to do so. Yet when this game is played in the laboratory, 40–50% of the players cooperate, which means that about half the players either do not understand the logic of the game or feel that cooperating is the just the right thing to do, or possibly both.

The Prisoner's Dilemma comes with a great story, but most of us don't get arrested very often. What are the implications of this game for normal life? Consider a related game called the Public Goods Game. To understand the economic significance of this game, we turn back to the great Paul Samuelson, who formalized the concept of a public good in a three-page paper published in 1954. The guy did not belabor things.

A public good is one that everyone can consume without diminishing the consumption of anyone else, and it is impossible to exclude anyone from consuming it. A fireworks display is a classic example. Samuelson proved that a market economy will undersupply public goods because no one will have an incentive to pay much of anything for them, since they can be consumed for free. For years after Samuelson's paper, economists assumed that the public goods problem could not be solved unless the government stepped in and provided the good, using taxes to make everybody pay a share.

Of course, if we look around, we see counterexamples to this result all the time. Some people donate to charities and clean up campgrounds, and quite miraculously, at least in America, most urban dog owners now carry a plastic bag when they take their dog for a "walk" in order to dispose of the waste. (Although there are laws in place supposedly enforcing this norm, they are rarely enforced.) In other words, some people cooperate, even when it is not in their self-interest to do so.

Economists, psychologists, and sociologists have all studied this problem using variations on the following simple game. Suppose we invite ten strangers to the lab and give each of them five one-dollar bills. Each subject can decide how many (if any) dollar bills he wishes to contribute to the "public good" by privately putting that money into a blank envelope. The rules of the game are that the total contributions to the public good envelope are doubled, and then the money is divided equally among all the players.

The rational, selfish strategy in the Public Goods Game is to contribute nothing. Suppose that Brendan decides to contribute one dollar. That dollar is doubled by the experimenter to two dollars and then is divided among all the players, making Brendan's share of that

contribution 20 cents. So for each dollar he contributes, Brendan will lose 80 cents. Of course other subjects are happy about Brendan's anonymous contribution, since they each get 20 cents as well, but they will not be grateful to him personally because his contribution was anonymous. Following Samuelson's logic, the prediction from economic theory is that no one will contribute anything. Notice that by being selfishly rational in this way, the group ends up with half as much money as they would have had if everyone contributed their entire stake, because if everyone contributed $5, that amount would be doubled, and everyone would go home with $10. The distinguished economist and philosopher Amartya Sen famously called people who always give nothing in this game rational fools for blindly following only material self-interest: "The *purely* economic man is indeed close to being a social moron. Economic theory has been much preoccupied with this rational fool."

As with the Prisoner's Dilemma, the standard economics prediction that no one will cooperate in the Public Goods Game turns out to be false. On average, people contribute about half their stake to the public good. There is still a public goods problem, meaning that public goods are not supplied in as great a quantity as people would want if they could all somehow agree to be cooperative, but the undersupply is about half as severe as the rational selfish model predicts—well, with one important proviso. When the game was played by economics graduate students, the contribution rate was only 20%, leading the sociologists Gerald Marwell and Ruth Ames to write a paper titled "Economists Free Ride: Does Anyone Else?"

A wisecracking economist might answer the question posed by Marwell and Ames's title with "experienced players." A robust finding in public goods experiments is that if a group of subjects play the game repeatedly, cooperation rates steadily fall, from the usual 50% down to nearly zero. When this result was first discovered, some economists argued that the initial high cooperation rates were due to some confusion on the part of the subjects, and when they played the game repeatedly, they learned that the rational selfish strategy was the right one. In 1999, the experimental economist James Andreoni tested this interpretation with a brilliant twist. After groups of five subjects played the game for the announced ten rounds and watched cooperation rates fall, the subjects were told that they would play another ten rounds of the game with the same players. What do you think happens?

If people have learned that being selfish is the smart thing to do, then cooperation rates should remain low after the restart, but that is not what happened. Instead, in the first round of the new game, cooperation rates jumped back to the same level as the first round of the initial experiment. So repeated play of the Public Goods Game does not teach people to be jerks; rather it teaches them that they are playing with (some) jerks, and no one likes to play the role of the sucker.

Further research by Ernst Fehr and his colleagues has shown that, consistent with Andreoni's finding, a large proportion of people can be categorized as *conditional cooperators*, meaning that they are willing to cooperate if enough others do. People start out these games willing to give their fellow players the benefit of the doubt, but if cooperation rates are low, these conditional cooperators turn into free riders. However, cooperation can be maintained even in repeated games if players are given the opportunity to punish those who do not cooperate. As illustrated by the Punishment Game, described earlier, people are willing to spend some of their own money to teach a lesson to those who behave unfairly, and this willingness to punish disciplines potential free riders and keeps robust cooperation rates stable.

A few years after my time with Danny in Vancouver, I wrote an article about cooperation

with the psychologist Robyn Dawes. In the conclusion, we drew an analogy with the roadside stands one would often see in the rural areas around Ithaca. A farmer would put some produce for sale out on a table in front of his farm. There was a box with a small slot to insert the payment, so money could be put in but not taken out. The box was also nailed to the table. I thought then, and think now, that farmers who use this system have a pretty good model of human nature in mind. There are enough honest people out there (especially in a small town) to make it worthwhile for the farmer to put out some fresh corn or rhubarb to sell. But they also know that if the money were left in an open box where anyone could take all of it, someone eventually would.

Economists need to adopt as nuanced a view of human nature as the farmers. Not everyone will free ride all the time, but some people are ready to pick your pocket if you are not careful. I keep a photograph of one of those farm stands in my office for inspiration.