

Chapter 3

Poor Logic

Inequality Has a Logic of Its Own

Jason grew up in one of thirteen A-frame houses along Highway 60 in Maceo, Kentucky. Across the highway lay railroad tracks, where freight trains would thunder through at all hours of the day and night. On the other side of the tracks was an open field that lay fallow throughout the year. It served as a buffer, separating the rails and the road and the houses from a shooting range, where men shot clay pigeons with buckshot. They were far enough from the small neighborhood that you couldn't hear the command to "pull," but only the sound of the guns.

As a kid Jason worked tobacco, chopping the tall stalks and spiking them on long wooden rods until they hung like a curtain of tropical leaves. The sheaves would be passed up through the rafters of the curing barn from one pair of hands to the next, where they would hang to dry through the fall, the barns steaming for months in the fields. Jason had the coveted spot at the top of the rafters. There was greater danger of falling, but the load was lighter because you didn't have to lift the tobacco over your head. It was hard work, but the tobacco tar blackening his hands provided a constant hum of energy as the nicotine leached through skin.

When he was a young man, Jason turned to work in auto body shops, grinding away rust, hammering out dents, and sanding

putty into the smooth curves of fenders and hoods. The sandpaper filled his nose with dust and left his hands bleeding at the end of the day. But the job paid better than tobacco. After years of working in other men's shops, he borrowed \$80,000 to build his own, eager to escape the limits of an hourly wage. When the shop later went under, he was left deep in debt.

Because he had been purchasing industrial solvents for his business, it was relatively simple to buy other restricted chemicals—chemicals like anhydrous ammonia, used to fertilize fields, kill mold—and to make methamphetamine. After all those years of rust, dust, and tar, here was a way that seemed so much easier. For the first time he had a nice truck and a computer, and could buy his family the clothes and gadgets they had gone without. When he started using the meth himself, he became so full of energy that anything seemed possible. But one night in an anonymous storage shed, a canister of anhydrous ammonia leaked, releasing a noxious odor that led a neighbor to call the police. Jason spent his fortieth birthday in prison. When he walked free after eight years, he had less to show for his hard work than on the day he first set foot in the tobacco field.

Most people think that selling drugs is a way to get rich quick. Why else would they take risks like going to jail, losing everything, or even getting killed? Sociologist Sudhir Venkatesh studied the economics of the drug trade by living with a drug-selling street gang in the dilapidated housing projects of inner-city Chicago. Over the course of several years he not only saw firsthand how the drug trade worked, but also got access to their books to see how the business model worked.

The average drug dealer made about \$3.50 an hour, about the same as the minimum wage at that time in the early 1990s. Many of the low-level gang members had second jobs in fast-food restaurants. One level up the chain of command were midlevel gang

leaders like J.T., who became Venkatesh's closest informant. J.T. made about \$30,000 a year and lived with his mother. For all the participants in the Chicago drug trade, the death rate was astronomically high, driven mostly by gang violence as they competed for turf. Seven percent of the gang members were killed each year, on average. That is many times higher than the mortality rate among U.S. soldiers serving in the wars in Iraq and Afghanistan.

One day over breakfast in a diner, J.T. offered Venkatesh a quiz about how to think like a gangster:

"Let's say two guys are offering me a great deal on raw product." I knew enough to know that "raw product" meant powdered cocaine, which J.T.'s gang cooked up into crack. "One of them says if I pay twenty percent higher than the usual rate, he'll give me a ten percent discount a year from now, meaning that if the supply goes down, he'll sell to me before the other niggers he deals with. The other guy says he'll give me a ten percent discount now if I agree to buy from him at the regular price a year from now. What would you do? . . ."

"Well, I don't have any idea how this market works, so I'm not sure what to do."

"No, that's not how you need to think. You always take the sure bet in this game. *Nothing* can be predicted—not supply, not anything. The nigger who tells you he's going to have product a year from now is lying. He could be in jail or dead. So take your discount now."

Whether they live in a depressed farm town or an inner-city ghetto, the fate of individuals like Jason and J.T. is familiar. A kid growing up in these environments is many times more likely to end up in prison, drop out of school, or be unemployed than a kid from a middle-class suburb. But where you choose to attribute cause and effect in the stories of these individuals reveals a lot about how you see the world. Many will see young men like Jason

and J.T. as responsible for their own problems. Others will focus on their lack of opportunity, due to factors like poverty or poor schools.

If you are like most people, you have given these explanations some thought now and then, and a few of them probably seem pretty convincing. One argument is that some individuals are simply lazy, irresponsible, or unintelligent. In a meritocracy where success is determined by hard work, responsibility, and talent, people who have these character flaws are more likely to commit crimes because of the same moral failings that lead them to be poor in the first place. Their children do worse in school because indolent or negligent parents are less likely to teach their kids good habits, and because intelligence is partially hereditary. Poor teens have unintended pregnancies because they are reckless. And those who lack character are more likely to make bad health decisions like smoking, abusing drugs, and eating too much.

Another version of this theory is that the poor have a different culture, one that does not foster the "middle-class values" of hard work, accountability, and self-reliance. Whether you trace the source of the problem to the individual or the culture, though, the argument is fundamentally the same: Bad character causes poverty and the problems that accompany it.

The character flaw theory is seductive, because it fits in the well-worn groove of how our minds ordinarily search for causes. When we try to understand the reasons for someone's behavior, our intuitive psychology looks first for something in the individual himself. This makes sense as a rule of thumb, because actions often are guided by beliefs, intentions, abilities, and so on. And surely there is some truth to the character flaw theory, given that a brilliant person with an iron will is more likely to succeed than someone with low intelligence and poor self-control.

We take this argument too far, though, when we do not take

into account the fact that actions are also shaped by particular situations. Take, for example, a classic experiment led by psychologist Ned Jones. Research participants heard a speech by a student about his attitude toward Fidel Castro. Half of the time it was a pro-Castro speech, and the other half it was anti-Castro. Half the participants were told that the speaker was free to take any position he wanted, while the other half were told that the researchers had assigned the speaker to advocate for a particular position. After listening to the speech, participants were asked how pro-Castro the speaker's beliefs really were.

The researchers made the very reasonable prediction that when the position in the speech was freely chosen, the audience would believe that the speech would reflect the true attitudes of the speaker, but when the position was assigned, it would assume the speaker had no genuine conviction about the topic. But that very reasonable prediction was wrong: Participants assumed that the speaker actually believed what he said both when the topic of the speech was freely chosen and when it was assigned. In other words, people seemed unable to take the situation into account, instead attributing the speech to the speaker's beliefs even when that assumption flew in the face of logic. We are powerfully biased to look through the specifics of a given situation as if they were a pane of glass and to explain behavior based on the characteristics of a person. This bias has been replicated so many times that researchers took to calling it the "fundamental attribution error."

The fundamental attribution error applies in lots of contexts. The college graduate is smart. The drug addict is weak willed. The person shopping with food stamps is lazy. One reason it is so prevalent is that it is simply easier to think about people than situations. Later studies found that the tendency to neglect the situation was worse when people were distracted by doing a second task at the same time as they made their judgments. In

other words, you are more likely to be blind to other people's situations when you are rushed, busy, under-rested, or overburdened. It takes a little extra mental work to consider that the college graduate might have been helped by family connections, or the food stamp recipient might be hardworking and yet stuck in a low-wage job.

Unlike the character flaw theory, another common explanation for self-defeating behavior does take the situation into account. This theory argues that it is poverty itself that causes these life problems. The poor are more likely to commit crimes because they lack more legitimate prospects to earn a living. Poor children do badly in school because schools in poor areas have less money to hire top teachers and their parents have less time to spend helping them with homework. The lack of steady, well-paying jobs means that couples are less likely to marry and form stable families. And poor people have more health issues because they lack nutritious food and access to good medical care. The poor are ultimately no different in their values or behaviors than the middle class. In short, poor environments cause poor outcomes, as a lack of resources leads to a lack of opportunity.

The same stock explanations that we typically hear from pundits are echoed in much of the social science research on inequality, which usually consists of well-meaning, affluent academics trying to explain the problems or symptoms of the poor. I find that these analyses are seriously limited. Both are partly right, and both are partly wrong. The character flaw versus impoverished environment theories are essentially a version of the old nature (character flaws) versus nurture (environment) debate. Like any nature versus nurture discussion, it misses the larger point: Nature and nurture always work together, because what we have inherited genetically as humans is not a rigid set of behaviors, like those that send fruit flies fluttering toward a light.

They are, rather, tendencies to react to changes in the environment in particular ways. The goal should be to comprehend how human nature has prepared us to respond in resource-rich and resource-poor environments, and to high and low levels of inequality. Once we do, we will understand why an individual brought up in a wealthy family would think and act differently than she would if she had been brought up in a poor family, and why an individual living in a situation of great inequality would behave differently than one living in conditions of equality. In that way we will begin to recognize how inequality changes who we are.

The thinking behind the environmental explanation is well intentioned. It avoids blaming the victims of poverty, discrimination, and bad circumstances by focusing on their lack of resources and opportunity as the causal factors. But in doing so, it naively assumes that the decisions and behaviors of the poor are essentially the same as those of the middle class. But as anyone who has lived in both poverty and affluence can attest, people *do* think and act differently in those very different worlds. One difference is how they consider the future.

When I was a child, I would spend most Saturdays playing at my friend Stephen's house. Stephen's family was college educated and solidly middle class. His mother was an insurance agent and his father was a police officer. They were wonderful people, but some of their behaviors befuddled me. For example, Stephen's mom would say, "It's a beautiful day today. What do you two have planned?" It was Saturday, after all, and she expected that we would have an itinerary laid out. We might have said, "Basketball from ten to noon, then a frozen burrito and SunnyD for lunch, and off to play video games until dark," had we been planning at all, but of course we weren't. Or at least, I wasn't. Then one day I was horrified to realize that Stephen *was* secretly planning our

schedules. To me, all that preparation seemed uptight, preppy, and somehow feminine. Men, in my world, lived for the present.

This now-bias and the near-pathological aversion to uptightness has gotten me into plenty of trouble over the years. I had to struggle, as I entered college and professional life, to attain the kind of conscientiousness and organization that seemed to come naturally to my middle-class classmates. By my third year of graduate school, I gave up and finally bought a day planner. I now recognize this extreme presentism as a common experience of people who grow up poor.

Of course, this approach to life seems self-defeating. If you want to get out of poverty, you would do well to plan for the future, save money, and invest in the miracle of compound interest. But that's not how people raised in poverty think about the future. The reasons for their perspective are far removed from the kinds of explanations offered by policy wonks and pundits on the nightly news. To understand them, we have to travel thousands of miles and tens of thousands of years to examine how evolution has prepared us to deal with scarce resources.

Live Fast, Die Young

Imagine you are an early human dwelling in the African grasslands. If you are a man, you spend your days hunting and fishing. If your band is in conflict with another band, you are constantly on the watch for enemies, because a raid might happen at any moment. If you are a woman, you are busy gathering fruits and nuts, as your parents did and their parents before them. If you are a young adult, you spend a fair amount of time flirting with other young adults and spreading the gossip that inevitably makes the rounds in a small band where everyone knows everyone else.

Given these conditions, how should you best spend your time and energy?

When we think about that question, we naturally consider what would make us the happiest. But from an evolutionary perspective, we have to remember that nature does not care if we are happy. In fact, nature does not care if we pass on our genes or not. It has no vested interest in whether your family line dies out, or if the whole human species goes extinct. Nature does not advocate for any particular outcome or any particular individual or group. Nature is simply whatever happens.

Still, nature is not merely random, because some behaviors do result in more copies of genes being passed on to future generations than others. Such successful behaviors will tend to be more common in future generations. The rhythm of this creative destruction creates exquisite patterns across the waves of evolutionary time. So to understand human nature from an evolutionary perspective, we have to understand what kinds of behaviors pass on more genes, and in what kinds of environments.

From an evolutionary standpoint, there are only two ways to expend resources that matter: survival and reproduction. Every organism faces a trade-off when it comes to how to invest energy (that is, cellular and metabolic energy, not effort and concentration). On the one hand, it can devote lots of energy to keeping itself alive. To do so, it might build muscle for strength and the immune system for maintaining health. On the other hand, it can allocate its energy to reproduction, creating eggs and sperm and the whole system of hormones and the sexy adult bodies that get eggs and sperm introduced to each other. Of course, we don't control that trade-off with conscious choices. But various physiological systems in our bodies are constantly regulating how much energy we are spending on these various construction projects (as we will see in more detail in the chapter on stress and health).

Which investment—the survival of our bodies or the creation of new ones—offers the best chance to pass along one's genes? It depends. Among other things, it depends on whether times are good or bad. When times are prosperous and the future looks secure, it is a sign that you are likely to live a long and healthy life. You will leave more descendants if you bide your time and wait to have children until you are really ready to support them well. You should devote everything you can to extensive parenting to make sure that they survive to reproduce themselves, and maybe you can even help raise your grandchildren.

When times are hard, the future is uncertain, and enemies are lurking behind every patch of grass, the odds favor an entirely different approach. You might not live long enough to have children later. Under those conditions, it pays to reproduce early and often. If you are going to reproduce at all, the best bet is to do so as soon as possible. The first approach is what evolutionary biologists call a “slow strategy” of investing for the future. The second is a “fast strategy,” as in, “live fast, die young.”

Of course, early *Homo sapiens* did not adopt a conscious strategy about how to maximize their genetic fitness. In our early history, however, those who took the fast approach when times were difficult and the slow approach when times were favorable left more descendants than those who were less responsive to the environment. As a result, there were more people in the next generation inclined to toggle between fast strategies in hard times and slow strategies in good ones. Now, so many generations later, we are the descendants of ancestors who were very, very good at adopting these tactics.

Biologists have known for decades that animals adapt to changes in their environments by shifting along the fast-slow continuum. They observed, for example, that butterflies that lived in locations that had a lot of predators would reproduce earlier, devoting less metabolic energy to growth and more to

reproduction. The same species in a location with few predators would live longer and would therefore take the opposite approach, starting reproduction later. The definitive evidence came, however, when scientists started doing experiments in the lab to ensure that it really was the dangerous conditions that caused the adaptations.

In one study biologists bred a population of about eight hundred fruit flies from ten “Adams” and ten “Eves.” Then they divided them up into two genetically identical groups. One was fortunate enough to be in the Safe group, which lived out its days eating, reproducing, and doing whatever fruit flies do for fun. The other group was not as lucky. Twice a week 90 percent of this Die Young group was killed and replaced with new flies. The researchers continued this process for four years.

Reading the scientific report of this experiment is unnerving. You can't help but imagine the situation from the perspective of the flies, finding yourself in this sci-fi nightmare in which some crazed giants in lab coats keep “disappearing” everyone you know. The experimental condition is euphemistically described as the “HAM [high adult mortality] treatment,” and mortality rate is precisely quantified: “The probability of surviving 1 week as an adult was $P = 0.01$.”

Despite its violence, the study reported important results. The flies in the Die Young group started reproducing at an earlier age, and they laid more eggs per female than those in the Safe group. This is just the effect predicted by the live fast, die young theory. It was not that the flies looked around, decided it was getting dangerous, and made a decision to start a family sooner. The flies that were able to reproduce early simply left more descendants in future generations.

In 1991 psychologist Jay Belsky and colleagues made an argument, based on the evolutionary fast-slow trade-off, that women raised in harsh, stressful, or chaotic environments would be more

likely to have children earlier. There was not much data available, however, to test his theory at the time. A few years later, psychologists Margo Wilson and Martin Daly took up the challenge by studying birth and death rates in Chicago. Chicago is a city of neighborhoods. You might start in Lincoln Park, with its leafy streets, wrought-iron streetlamps, and redbrick brownstones. If you travel south to Englewood, with its barren concrete, windowless buildings, and sidewalks strewn with broken glass, you would be forgiven for thinking that in twelve short miles you had crossed some invisible border into another country. In some ways, you have.

Wilson and Daly looked at the average age at which women had their first child in each of Chicago's neighborhoods. As predicted, women gave birth earlier in poorer areas. They then correlated the age at first birth with life expectancies in each neighborhood, because from an evolutionary perspective it is life expectancy that is the most important source of pressure for reproducing earlier. The correlation was strikingly large, almost a one-to-one correspondence: As life expectancy decreased, so did the women's age when they started having children. Just as the live fast, die young theory predicts, when people die young, they give birth sooner.

In the years since that groundbreaking research, dozens of studies have confirmed Wilson and Daly's results. Women brought up in poor or dangerous environments have children earlier. They also have more children, on average, which is another way to increase the chances of passing on genes.

The theory proposed by Belsky therefore seems to have been borne out by the data. But Belsky had not only predicted earlier births. He went further, arguing that the "strategy" for women raised in adversity to have children earlier and more frequently was not simply a choice. Rather, it was a response to the amount of certainty or uncertainty in their environment, which should

affect the way they related to the world and to other people, both mentally and physically. Belsky had predicted that girls raised in poor, dangerous, or chaotic conditions would actually reach puberty and begin menstruating earlier than those raised in stable middle-class homes. If so, they would begin having children sooner, on average, because of their earlier maturation. This was a bolder prediction, because it suggested that home conditions not only affected people's choices, but also their biology.

This work set off a flurry of studies in the 1990s in which researchers from many different labs tracked families for years, from the time that new babies were born through the time when they began having children of their own. If it really was the chaotic environment that caused the changes in birth rates, then the age at which girls reached puberty should be predictable even before they were born, knowing nothing about them other than their neighborhood or family situation. In study after study, Belsky's prediction was confirmed. By the mid-2000s, it was clear that girls raised in harsh, poor, or chaotic homes reached puberty earlier than those raised in more stable homes.

These results also pushed the theory further in another way. Although the animal studies focused on death rates and birth rates, the human studies looked at a much broader range of troubles. Earlier puberty and earlier childbirth were linked not only to life expectancies, but also to poverty, to homes with an absent father, and to the degree of economic inequality in the region. Even though these sorts of hardships are not themselves lethal (at least not directly), they seemed to cue the same kinds of biological and psychological changes as high mortality rates do.

How extensive are the effects of the fast-slow trade-off among humans? Psychology experiments suggest that they are much more prevalent than anyone previously suspected, influencing people's behaviors and decisions in ways that have nothing to do with reproduction. Some of the most important now versus later

trade-offs involve money. Financial advisers tell us that if we skip our daily latte and instead save that three dollars a day, we could increase our savings by more than a thousand dollars a year. But that means facing a daily choice: How much do I want a thousand dollars in the bank at the end of the year? And how great would a latte taste right now?

The same evaluations lurk behind larger life decisions. Do I invest time and money in going to college, hoping for a higher salary in the long run, or do I take a job that guarantees an income now? Do I work at a regular job and play by the rules, even if I will probably struggle financially all my life, or do I sell drugs? If I choose drugs, I might lose everything in the long run and end up broke, in jail, or dead. But I might make a lot of money today.

Even short-term feelings of affluence or poverty can make people more or less shortsighted. Recall from the earlier chapters that subjective sensations of poverty and plenty have powerful effects, and those are usually based on how we measure ourselves against other people. Psychologist Mitch Callan and colleagues combined these two principles and predicted that when people are made to feel poor, they will become myopic, taking whatever they can get immediately and ignoring the future. When they are made to feel rich, they would take the long view.

Their study began by asking research participants a long series of probing questions about their finances, their spending habits, and even their personality traits and personal tastes. They told participants that they needed all this detailed information because their computer program was going to calculate a personalized "Comparative Discretionary Income Index." They were informed that the computer would give them a score that indicated how much money they had compared with other people who were similar to them in age, education level, personality traits, and so on. In reality, the computer program did none of that, but merely displayed a little flashing progress bar and the words

"Calculating. Please wait . . ." Then it provided random feedback to participants, telling half that they had more money than most people like them, and the other half that they had less money than other people like them.

Next, participants were asked to make some financial decisions, and were offered a series of choices that would give them either smaller rewards received sooner or larger rewards received later. For example, they might be asked, "Would you rather have \$100 today or \$120 next week? How about \$100 today or \$150 next week?" After they answered many such questions, the researchers could calculate how much value participants placed on immediate rewards, and how much they were willing to wait for a better long-term payoff.

The study found that, when people felt poor, they tilted to the fast end of the fast-slow trade-off, preferring immediate gratification. But when they felt relatively rich, they took the long view. To underscore the point that this was not simply some abstract decision without consequences in the real world, the researchers performed the study again with a second group of participants. This time, instead of hypothetical choices, the participants were given twenty dollars and offered the chance to gamble with it. They could decline, pocket the money, and go home, or they could play a card game against the computer and take their chances, in which case they either would lose everything or might make much more money. When participants were made to feel relatively rich, 60 percent chose to gamble. When they were made to feel poor, the number rose to 88 percent. Feeling poor made people more willing to roll the dice.

The astonishing thing about these experiments was that it did not take an entire childhood spent in poverty or affluence to change people's level of shortsightedness. Even the mere subjective feeling of being less well-off than others was sufficient to trigger the live fast, die young approach to life.

Nothing to Lose

Most of the drug-dealing gang members that Sudhir Venkatesh followed were earning the equivalent of minimum wage and living with their mothers. If they weren't getting rich and the job was so dangerous, then why did they choose to do it? Because there were a few top gang members who were making several hundred thousand dollars a year. They made their wealth conspicuous by driving luxury cars and wearing expensive clothes and flashy jewelry. They traveled with entourages. The rank-and-file gang members did not look at one another's lives and conclude that this was a terrible job. They looked instead at the top and imagined what they could be. Despite the fact that their odds of success were impossibly low, even the slim chance of making it big drove them to take outrageous risks.

The live fast, die young theory explains why people would focus on the here and now and neglect the future when conditions make them feel poor. But it does not tell the whole story. The research described in Chapter 2 revealed that rates of many health and social problems were higher, even among members of the middle class, in societies where there was more inequality. One of the puzzling aspects of the rapid rise of inequality over the past three decades is that almost all of the change in fortune has taken place at the top. The incomes of the poor and the middle class are not too different from where they were in 1980, once the numbers are adjusted for inflation. But the income and wealth of the top 1 percent have soared, and those of the top one tenth of a percent dwarfed even their increases. How are the gains of the superrich having harmful effects on the health and well-being of the rest of us?

Part of the answer to that question can be found within the hives of bumblebees. Ecologist Ralph Cartar was studying the

feeding habits of wild bumblebees on a little island off the coast of British Columbia. Bees there fed on the nectar mainly from two types of flowers: seablush and dwarf huckleberry. Seablush is a tall flower topped with bursts of bright pink petals. A field of seablush looks like an impressionist painting, a thousand points of pink against the green of summer. Dwarf huckleberry is a humbler plant with the appearance of a wild bush, bearing perhaps only a few blue berries and a few tiny flowers hanging downward like white bells. A field of dwarf huckleberry could be mistaken for a meadow of weeds.

Cartar noticed that seablush and dwarf huckleberry are judged very differently from the bees' point of view. The insects get about the same amount of nutrition from either kind of flower on average. But opting for seablush guarantees a sure thing. If they go to have a drink in the field of seablush, they will never leave thirsty, for each flower has about the same modest amount of nectar—which means they will never strike it rich, either. Seablush is therefore a low-risk, low-reward investment. Dwarf huckleberry, in contrast, is bumblebee blackjack: Some flowers contain a jackpot of nectar, while others have none. Dwarf huckleberry is a high-risk, high-reward gamble.

Cartar set out to test an evolutionary theory about risk taking, which I'll call the "nothing to lose theory." It says that for any foraging organism, from bumblebees to hunter-gatherers, the amount of risk it is willing to take depends on how needy it is. A well-fed bumblebee can afford to play it safe and stick to the seablush. But consider a bee that is close to starvation, unlikely to survive on the meager nectar from the seablush flower. That desperate bee, with nothing to lose, will take its chances and light out in search of a windfall among the dwarf huckleberry. That is to say, as needs increase, so, too, does risk taking.

To test this theory, Cartar had to compare the foraging choices

of the bees when they were well fed and when they were needy. Each day he and his assistants visited fourteen bee colonies. On some days they would steal the nectar in certain nests, siphoning it out through little tubes, and then give it to other nests. The following day they would reverse the procedure, so that the nests that had been robbed the previous day were now given bonus nectar. The researchers would then count how many bees from each colony went to each flower patch each day. (The bees were marked with different colors to identify their home colonies.) As Cartar suspected, when the bees received bonus nectar, they played it safe and fed in the seablush fields. But when their nectar was removed, they headed straight for the dwarf huckleberry fields.

Calculating the best option in an uncertain environment is a complicated matter; even humans have a hard time with it. According to traditional economic theories, rational decision making means maximizing your payoffs. You can calculate your “expected utility” by multiplying the size of the reward by the likelihood of getting it. So, an option that gives you a 90 percent chance of winning \$500 has a greater expected utility than an option that gives you a 40 percent chance of winning \$1,000 ($\$500 \times .90 = \450 as compared with $\$1,000 \times .40 = \400). But the kind of decision making demonstrated by the bumblebees doesn’t necessarily line up well with the expected utility model. Neither, it turns out, do the risky decisions made by the many other species that also show the same tendency to take big risks when they are needy.

Humans are one of those species. Imagine what you would do if you owed a thousand dollars in rent that was due today or you would lose your home. In a gamble, would you take the 90 percent chance of winning \$500, or the 40 percent chance of winning \$1,000? Most people would opt for the smaller chance of getting the \$1,000, because if they won, their need would be met.

Although it is irrational from the expected utility perspective, it is rational in another sense, because meeting basic needs is sometimes more important than the mathematically best deal. The fact that we see the same pattern across animal species suggests that evolution has found need-based decision making to be adaptive, too. From the humble bumblebee, with its tiny brain, to people trying to make ends meet, we do not always seek to maximize our profits. Call it Mick Jagger logic: If we can’t always get what we want, we try to get what we need. Sometimes that means taking huge risks.

We saw in Chapter 2 that people judge what they need by making comparisons to others, and the impact of comparing to those at the top is much larger than comparing to those at the bottom. If rising inequality makes people feel that they need more, and higher levels of need lead to risky choices, it implies a fundamentally new relationship between inequality and risk: Regardless of whether you are poor or middle class, inequality itself might cause you to engage in riskier behavior.

To test whether inequality actually increases risk taking, my collaborators and I designed a simple experiment. Participants in the study were asked to make a series of gambling decisions. Each one offered a range of choices from low risk/low reward options (say, a 100 percent chance of winning 15 cents) to high risk/high reward options (such as a 10 percent chance of winning \$1.50). They were divided into two groups, and before they gambled, we provided them with information about how previous players had done, which was the crucial experimental factor. In the Equal group, participants were told that the top performers earned only a few cents more than the lowest-performing group. In the Unequal group, they were told that the top performers earned dramatically more than the low performers, who walked away with almost nothing. The average earnings in both experimental conditions were the same. After participants were told how previous

players had done, they indicated how much money they would need to be satisfied in the game, and then they played the game themselves.

As we expected, players in the Unequal group indicated that they would need much more money to be satisfied than those in the Equal group. In a situation where there is a great deal of inequality, players felt needier. As a result, when the Unequal group made gambling decisions themselves, they took more risks, preferring high risk/high reward choices. The critical factor in this experiment was that the two groups, whose members had similar average incomes and education levels, did not start off with different amounts of money. They had not yet played the game, so they had no winnings to worry about losing. Yet simply being aware that there was a big gap between the winners and the losers made the Unequal group take more chances. This experiment provided the first evidence that inequality *itself* can cause risky behavior.

What were the implications? By definition, in the Unequal group a small number of players won bigger rewards, but most of them lost. In the Equal group, fewer people got extremely high payoffs, but fewer people lost everything. In other words, by causing riskier decisions, inequality led to greater differences between the haves and the have-nots. Inequality, in effect, bred even greater inequality.

Experiments like this are a Petri dish for psychologists, who can tightly control a situation and use random assignment, which is essential for getting a clean answer about cause and effect. But in the process of bringing the problem into the lab, they remove it from its everyday context. For our own experiment, we wanted to know whether the same dynamic would hold true in the wild. Is risk taking one of the linchpins connecting inequality to more chaotic lives for ordinary people?

One common way that researchers measure risk taking is

simply to ask participants about their behavior by using surveys. For a lot of the kinds of risks that get people into trouble, though, this technique presents problems. "Thank you for taking our survey, ma'am. Now, how often in the past year have you made foolish financial decisions? How often have you engaged in risky health behaviors, like having unprotected sex? How about drinking and driving? And how often have you ignored the law and dabbled in using or selling illegal drugs?" There are obvious ethical issues involved in asking people to admit doing things that are at best embarrassing and at worst unlawful. Even if you did pose those kinds of questions, it would be hard to trust the answers.

Instead, we used a different method to measure risky behaviors in everyday life. We turned to Google to seek out terms that people might search for if they were engaged in particular kinds of risky behaviors. We began by identifying three areas in which risky decisions might cause real problems: financial decision making, sexual behavior, and the use of drugs and alcohol. Once we had settled on sex, drugs, and money, we asked ourselves: What might I search for if I was engaged in risky behavior of this type?

People googling terms like "lottery tickets" and "payday loans," for example, are probably already involved in some risky spending. To measure sexual riskiness, we counted searches for the morning-after pill and for STD testing. And to measure drug- and alcohol-related risks, we counted searches for how to get rid of a hangover and how to pass a drug test. Of course, a person might search for any of these terms for reasons unrelated to engaging in risky behaviors. But, on average, if there are more people involved in sex, drugs, and money risks, you would expect to find more of these searches.

Armed with billions of such data points from Google, we asked whether the states where people searched most often for those

terms were also the states with higher levels of income inequality. To help reduce the impact of idiosyncrasies related to each search term, we averaged the six terms together into a general risk-taking index. Then we plotted that index against the degree of inequality in each state. The states with higher inequality had much higher risk taking, as estimated from their Google searches. This relationship remained strong after statistically adjusting for the average income in each state.

If the index of risky googling tracks real-life risky behavior, then we would expect it to be associated with poor life outcomes. So we took our Google index and tested whether it could explain the link, reported in Chapter 2, between inequality and Richard Wilkinson and Kate Pickett's index of ten major health and social problems. Indeed, the risky googling index was strongly correlated with the index of life problems. Using sophisticated statistical analyses, we found that inequality was a strong predictor of risk taking, which in turn was a strong predictor of health and social problems. These findings suggest that risky behavior is a pathway that helps explain the link between inequality and bad outcomes in everyday life. The evidence becomes much stronger still when we consider these correlations together with the evidence of cause and effect provided by the laboratory experiments.

Experiments like the ones described in this chapter are essential for understanding the effects of inequality, because only experiments can separate the effects of the environment from individual differences in character traits. Surely there were some brilliant luminaries and some dullards in each experimental group. Surely there were some hearty souls endowed with great self-control, and some irresponsible slackers, too. Because they were assigned to the experimental groups at random, it is exceedingly unlikely that the groups differed consistently in their personalities or abilities. Instead, we can be confident that the differences we see are caused

by the experimental factor, in this case making decisions in a context of high or low inequality.

John Bradford was a sixteenth-century Protestant theologian who rose to prominence under King Edward VI. His fate changed swiftly when Edward died and Queen Mary Tudor ascended the throne. A Catholic, she was called "Bloody Mary" for the hundreds of Protestants she burned at the stake. Imprisoned in the Tower of London, Bradford watched as other prisoners were led down the hall to their execution. For most of that time he did not know whether he would be released or executed. He would remark to his cellmates that what separated his fate from that of the doomed was nothing in his power, nothing he could predict, nothing his brilliance could change. Experiments are gentle reminders that, in the words of John Bradford, "There but for the grace of God go I." If we deeply understand behavioral experiments, they make us humble. They challenge our assumption that we are always in control of our own successes and failures. They remind us that, like John Bradford, we are not simply the products of our thoughts, our plans, or our bootstraps.

These experiments suggest that any average person, thrust into these different situations, will start behaving differently. Imagine that you are an evil scientist with a giant research budget and no ethical review board. You decide to take ten thousand newborn babies and randomly assign them to be raised by families in a variety of places. You place some with affluent, well-educated parents in the suburbs of Atlanta. You place others with single mothers in inner-city Milwaukee, and so on. The studies we've looked at suggest that the environments you assign them to will have major effects on their futures. The children you assign to highly unequal places, like Texas, will have poorer outcomes than those you assign to more equal places, like Iowa, even though Texas and Iowa have about the same average income.

In part, this will occur because bad things are more likely to happen to them in unequal places. And in part, it will occur because the children raised in unequal places will behave differently. All of this can transpire even though the babies you are randomly assigning begin life with the same potential abilities and values.

The results of our experiments on inequality and risk taking made me think again of Jason, who is not just another subject in my studies. He is my older brother. I worked tobacco, too, and felt the cutaneous buzz of tobacco tar. I worked for him in his body shop, sanding primer until my fingerprints had evaporated on hot summer days. One summer day when I was in high school, when Jason still had his body shop, he stopped by our parents' house and asked me if I wanted to take a ride with him to Frankfort. He was selling a car that he had bought cheap and restored, and had to pick up the original title in the state capital. He was being kind to get a bored teenager out of the house but also wanted company for the drive, two and a half hours each way. Speeding down the highway in his truck, we talked more seriously than we normally would have. I got the sense that something was on his mind.

The traffic ahead of us slowed and then came to a standstill. Staring at the trail of red brake lights ahead, Jason suddenly turned the wheel to the left, and we drove off the road, down into the grassy median strip that was several times wider than the asphalt lanes on either side. We bobbed back uphill and onto the opposite lane, speeding now in the other direction. We pulled off the highway onto an exit and started driving down small country roads to avoid the jammed traffic. "Be damned if I'm going to wait for that," he explained. A little while later, back on the highway, Jason took out a small carved wooden case. From one side of the mysterious object he pulled a small stainless steel tube. He pushed the tube into the other side of the case, pulling it out again with a small wad

of crushed marijuana stuffed into one end. Steering the truck with his knee, he lit the end of the tube with a cigarette lighter. A pipe! I was impressed by the ingenious little device. I supposed that it was more practical than getting out rolling papers while driving.

Back in the quiet drone of the highway, Jason talked about how he had no way of predicting whether his body shop would be there in a year. "I'm never gonna have nothing," he said. "So I gotta do what I'm gonna do now."