Everything is Obvious

*ONCE YOU KNOW THE ANSWER

How Common Sense Fails Us

DUNCAN WATTS

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CONTENTS

A Sociologist's Apology

In January 1998, about halfway through my first year out of graduate school, my housema[]
at the time handed me a copy of *New Scientist* magazine containing a book review by t[]
physicist and science writer John Gribbin. The book Gribbin was reviewing was called *Tric[]
of the Trade,* by the Chicago sociologist Howard Becker, and was mostly a collection []
Becker's musings on how to do productive social science research. Gribbin clearly hated i[]
judging Becker's insights to be the kind of self-evident checks that "real scientists learn in t[]
cradle." But he didn't stop there. He went on to note that the book had merely reinforced h[]
opinion that all of social science was "something of an oxymoron" and that "any physici[]
threatened by cuts in funding ought to consider a career in the social sciences, where it oug[]
to be possible to solve the problems the social scientists are worked up about in a trice."[1]

There was a reason my roommate had given me this particular review to read and why th[]
particular line stuck in my head. I had majored in physics at college, and at the time when []
read Gribbin's review I had just finished my PhD in engineering; I had written m[]
dissertation on the mathematics of what are now called small-world networks.[2] But althoug[]
my training had been in physics and mathematics, my interests had turned increasing[]
toward the social sciences and I was just beginning what turned out to be a career []
sociology. So I felt that in a sense I was embarking on a miniature version of Gribbin[]
proposed experiment. And to be honest, I might have suspected that he was right.

Twelve years later, however, I think I can say that the problems sociologists, economist[]
and other social scientists are "worked up about" are not going to be solved in a trice, by m[]
or even by a legion of physicists. I say this because since the late 1990s many hundreds, if n[]
thousands of physicists, computer scientists, mathematicians, and other "hard" scientists hav[]
taken an increasing interest in questions that have traditionally been the province of t[]
social sciences—questions about the structure of social networks, the dynamics of grou[]
formation, the spread of information and influence, or the evolution of cities and market[]
Whole fields have arisen over the past decade with ambitious names like "network scienc[]
and "econophysics." Datasets of immense proportions have been analyzed, countless ne[]
theoretical models have been proposed, and thousands of papers have been published, man[]
of them in the world's leading science journals, such as *Science, Nature,* and *Physical Revie[]
Letters.* Entire new funding programs have come into existence to support these new researc[]
directions. Conferences on topics such as "computational social science" increasingly provid[]
forums for scientists to interact across old disciplinary boundaries. And yes, many new jo[]
have appeared that offer young physicists the chance to explore problems that once wou[]
have been deemed beneath them.

The sum total of this activity has far exceeded the level of effort that Gribbin's offhan[]
remark implied was required. So what have we learned about those problems that soci[]
scientists were so worked up about back in 1998? What do we really know about the natu[]
of deviant behavior or the origins of social practices or the forces that shift cultural norms–[]

the kinds of problems that Becker talks about in his book—that we didn't know then? Wh[at] new solutions has this new science provided to real-world problems, like helping reli[ef] agencies respond more effectively to humanitarian disasters in places like Haiti or Ne[w] Orleans, or helping law enforcement agencies stop terrorist attacks, or helping financi[al] regulatory agencies police Wall Street and reduce systemic risk? And for all the thousands [of] papers that have been published by physicists in the past decade, how much closer are we [to] answering the really big questions of social science, like the economic development [of] nations, the globalization of the economy, or the relationship between immigratio[n,] inequality, and intolerance? Pick up the newspaper and judge for yourself, but I would sa[y] not much.[3]

If there's a lesson here, you might think it would be that the problems of social science a[re] hard not just for social scientists, but for physicists as well. But this lesson, it seems, has n[ot] been learned. Quite to the contrary, in fact, in 2006 Senator Kay Bailey Hutchison, [a] Republican from Texas, proposed that Congress cut the entire social and behavioral scienc[e] budget of the National Science Foundation. Bailey Hutchison, it should be noted, is n[ot] antiscience—in 2005 she proposed doubling funds for medical science. Rather, it wa[s] exclusively *social* science research that she felt "is not where we should be directing [NSF] resources at this time." Ultimately the proposal was defeated, but one might still wond[er] what the good senator was thinking. Presumably she doesn't think that social *problems* a[re] unimportant—surely no one would argue that immigration, economic development, a[nd] inequality are problems that are somehow unworthy of attention. Rather it appears that, li[ke] Gribbin, she doesn't consider social problems to be *scientific* problems, worthy of t[he] prolonged attention of serious scientists. Or as Hutchinson's colleague from Oklahom[a,] Senator Tom Coburn, put it three years later in a similar proposal, "Theories on politic[al] behavior are best left to CNN, pollsters, pundits, historians, candidates, political parties, a[nd] the voters."[4]

Senators Hutchinson and Coburn are not alone in their skepticism of what social scien[ce] has to offer. Since becoming a sociologist, I have frequently been asked by curious outside[rs] what sociology has to say about the world that an intelligent person couldn't have figured o[ut] on their own. It's a reasonable question, but as the sociologist Paul Lazarsfeld pointed o[ut] nearly sixty years ago, it also reveals a common misconception about the nature of soci[al] science. Lazarsfeld was writing about *The American Soldier*, a then-recently published study [of] more than 600,000 servicemen that had been conducted by the research branch of the wa[r] department during and immediately after the Second World War. To make his poin[t,] Lazarsfeld listed six findings from the study that he claimed were representative of t[he] report. For example, number two was that "Men from rural backgrounds were usually [in] better spirits during their Army life than soldiers from city backgrounds." "Aha," say[s] Lazarsfeld's imagined reader, "that makes perfect sense. Rural men in the 1940s we[re] accustomed to harsher living standards and more physical labor than city men, so natural[ly] they had an easier time adjusting. Why did we need such a vast and expensive study to te[ll] me what I could have figured out on my own?"

Why indeed…. But Lazarsfeld then reveals that all six of the "findings" were in fact th[e] exact opposite of what the study actually found. It was city men, not rural men, who we[re] happier during their Army life. Of course, had the reader been told the real answers in th[e]

first place she could just as easily have reconciled them with other things that she alread thought she knew: "City men are more used to working in crowded conditions and corporations, with chains of command, strict standards of clothing and social etiquette, and on. That's obvious!" But that's exactly the point that Lazarsfeld was making. When ever answer *and its opposite* appears equally obvious, then, as Lazarsfeld put it, "something wrong with the entire argument of 'obviousness.' "[5]

Lazarsfeld was talking about social science, but what I will argue in this book is that h point is equally relevant to any activity—whether politics, business, marketing, philanthrop —that involves understanding, predicting, changing, or responding to the behavior of peopl Politicians trying to decide how to deal with urban poverty already feel that they have pretty good idea why people are poor. Marketers planning an advertising campaign alread feel that they have a decent sense of what consumers want and how to make them want mor of it. And policy makers designing new schemes to drive down healthcare costs or to improv teaching quality in public schools or to reduce smoking or to improve energy conservatio already feel that they can do a reasonable job of getting the incentives right. Typically peop in these positions do not expect to get everything right all the time. But they also feel that th problems they are contemplating are mostly within their ability to solve—that "it's not rock science," as it were.[6] Well, I'm no rocket scientist, and I have immense respect for the peop who can land a machine the size of a small car on another planet. But the sad fact is th we're actually much better at planning the flight path of an interplanetary rocket than we a at managing the economy, merging two corporations, or even predicting how many copies a book will sell. So why is it that rocket science *seems* hard, whereas problems having to with people—which arguably are much harder—*seem* like they ought to be just a matter common sense? In this book, I argue that the key to the paradox is common sense itself.

Criticizing common sense, it must be said, is a tricky business, if only because it's almo universally regarded as a good thing—when was the last time you were told *not* to use i Well, I'm going to tell you that a lot. As we'll see, common sense is indeed exquisite adapted to handling the kind of complexity that arises in everyday situations. And for tho situations, it's every bit as good as advertised. But "situations" involving corporation cultures, markets, nation-states, and global institutions exhibit a very different kind complexity from everyday situations. And under these circumstances, common sense tur out to suffer from a number of errors that systematically mislead us. Yet because of the wa we learn from experience—even experiences that are never repeated, or that take place other times and places—the failings of commonsense reasoning are rarely apparent to u Rather, they manifest themselves to us simply as "things we didn't know at the time" b which seem obvious in hindsight. The paradox of common sense, therefore, is that even as helps us make sense of the world, it can actively undermine our ability to understand it. you don't quite understand what that last sentence means, that's OK, because explaining i along with its implications for policy, planning, forecasting, business strategy, marketing, ar social science is what the rest of this book is about.

Before I start, though, I would like to make one related point: that in talking with frien and colleagues about this book, I've noticed an interesting pattern. When I describe th argument *in the abstract*—that the way we make sense of the world can actually prevent from understanding it—they nod their heads in vigorous agreement. "Yes," they say, "I'v

always thought that people believe all sorts of silly things in order to make themselves fe
like they understand things that in fact they don't understand at all." Yet when the very sam
argument calls into question some particular belief of their own, they invariably change the
tune. "Everything you are saying about the pitfalls of common sense and intuition may b
right," they are in effect saying, "but it doesn't undermine my own confidence in th
particular beliefs I happen to hold." It's as if the failure of commonsense reasoning is only th
failure of other people's reasoning, not their own.

People, of course, make this sort of error all the time. Around 90 percent of American
believe they are better-than-average drivers, and a similarly impossible number of peop
claim that they are happier, more popular, or more likely to succeed than the average perso
In one study, an incredible 25 percent of respondents rated themselves in the top 1 percent
terms of leadership ability.[7] This "illusory superiority" effect is so common and so we
known that it even has a colloquial catchphrase—the Lake Wobegone effect, named for *Prai*
Home Companion host Garrison Keillor's fictitious town where "all the children are abov
average." It's probably not surprising, therefore, that people are much more willing
believe that others have misguided beliefs about the world than that their own beliefs a
misguided. Nevertheless, the uncomfortable reality is that what applies to "everyon
necessarily applies to us, too. That is, the fallacies embedded in our everyday thinking an
explanations, which I will be discussing in more detail later, *must* apply to many of our ow
possibly deeply held, beliefs.

None of this is to say that we should abandon all our beliefs and start over from scratch-
only that we should hold them up to a spotlight and regard them with suspicion. For exampl
I *do* think that I'm an above-average driver—even though I know that statistically speakin
nearly half the people who think the same thing as I do are wrong. I just can't help i
Knowing this, however, I can at least consider the possibility that I might be deluding mysel
and so try to pay attention to when I make mistakes as well as when others do. Possibly I ca
begin to accept that not every altercation is necessarily the other guy's fault, even if I'm sti
inclined to think it is. And perhaps I can learn from these experiences to determine what
should do differently as well as what others should be doing differently. Even after doing a
this, I can't be sure that I'm a better-than-average driver. But I can at least become a bett
driver.

In the same way, when we challenge our assumptions about the world—or even mo
important, when we realize we're making an assumption that we didn't even know we we
making—we may or may not change our views. But even if we don't, the exercise o
challenging them should at least force us to notice our own stubbornness, which in tu
should give us pause. Questioning our own beliefs in this way isn't easy, but it is the first ste
in forming new, hopefully more accurate, beliefs. Because the chances that we're alread
correct in everything we believe are essentially zero. In fact, the argument that Howar
Becker was really making in the book that I read about all those years ago—an argument th
was obviously lost on his reviewer, and at the time would have been lost on me, too—wa
that learning to think like a sociologist means learning to question precisely your instinc
about how things work, and possibly to unlearn them altogether. So if reading this book on
confirms what you already thought you knew about the world, then I apologize. As
sociologist, I will not have done my job.

PART ONE

COMMON SENSE

The Myth of Common Sense

Every day in New York City five million people ride the subways. Starting from their home throughout the boroughs of Manhattan, Brooklyn, Queens, and the Bronx, they pou themselves in through hundreds of stations, pack themselves into thousands of cars th barrel though the dark labyrinth of the Metropolitan Transportation Authority's tunn system, and then once again flood the platforms and stairwells—a subterranean river humanity urgently seeking the nearest exit and the open air beyond. As anyone who has ev participated in this daily ritual can attest, the New York subway system is something betwee a miracle and nightmare, a Rube Goldberg contraption of machines, concrete, and people th in spite of innumerable breakdowns, inexplicable delays, and indecipherable publ announcements, more or less gets everyone where they're going, but not without exacting certain amount of wear and tear on their psyche. Rush hour in particular verges on a citywid mosh pit—of tired workers, frazzled mothers, and shouting, shoving teenagers, all scrabblin over finite increments of space, time, and oxygen. It's not the kind of place you go in sear of the milk of human kindness. It's not the kind of place where you'd expect a perfect healthy, physically able young man to walk up to you and ask you for your seat.

And yet that's precisely what happened one day in the early 1970s when a group psychology students went out into the subway system on the suggestion of their teacher, th social psychologist Stanley Milgram. Milgram was already famous for his controversi "obedience" studies, conducted some years earlier at Yale, in which he had shown th ordinary people brought into a lab would apply what they thought were deadly electric shocks to a human subject (really an actor who was pretending to be shocked) simply becaus they were told to do so by a white-coated researcher who claimed to be running experiment on learning. The finding that otherwise respectable citizens could, und relatively unexceptional circumstances, perform what seemed like morally incomprehensib acts was deeply disturbing to many people—and the phrase "obedience to authority" h carried a negative connotation ever since.[1]

What people appreciated less, however, is that following the instructions of authori figures is, as a general rule, indispensible to the proper functioning of society. Imagine students argued with their teachers, workers challenged their bosses, and drivers ignore traffic cops anytime they asked them to do something they didn't like. The world wou descend into chaos in about five minutes. Clearly there are moments when it's appropriate resist authority, and most people would agree that the situation Milgram created in the la would qualify as such a moment. But what the experiment also illustrated was that the soci order that we take for granted in everyday life is maintained in part by hidden rules that don't even realize exist until we try to break them.

Based on this experience, and having subsequently moved to New York, Milgram ha begun to wonder if there was a similar "rule" about asking people for seats on the subwa Like the rule about obeying authority figures, this rule is never really articulated, nor wou

a typical rider be likely to mention it if asked to describe the rules of subway riding. And y[ ]it exists, as Milgram's students quickly discovered when they went about their little fie[ ]experiment. Although more than half of the riders asked eventually surrendered their seat[ ]many of them reacted angrily or demanded some explanation for the request. Everyon[ ]reacted with surprise, even amazement, and onlookers often made disparaging remarks. B[ ]more interesting than the response of the riders was that of the experimenters themselve[ ]who found it extremely difficult to perform the experiment in the first place. Their reluctanc[ ]was so great, in fact, that they had to go out in pairs, with one of them acting as mor[ ]support for the other. When the students reported their discomfort to Milgram, he scoffed [ ]them. But when he tried to do the experiment himself, the simple act of walking up to [ ]complete stranger and asking for his or her seat left him feeling physically nauseated. A[ ]trivial as it seemed, in other words, this rule was no more easily violated than the obedienc[ ]to-authority "rule" that Milgram had exposed years earlier.[2]

As it turns out, a big city like New York is full of these sorts of rules. On a crowded trai[ ]for example, it's no big deal if you're squeezed in against other people. But if someone stan[ ]right next to you when the train is empty, it's actually kind of repellant. Whether it[ ]acknowledged or not, there's clearly some rule that encourages us to spread out as much [ ]we can in the available space, and violations of the rule can generate extreme discomfort. [ ]the same way, imagine how uncomfortable you'd feel if someone got on your elevator a[ ]stood facing you instead of turning around to face the door. People face each other all th[ ]time in enclosed spaces, including on subway trains, and nobody thinks twice about it. But [ ]an elevator it would feel completely weird, just as if the other person had violated some ru[ ]—even though it might not have occurred to you until that moment that any such ru[ ]existed. Or how about all the rules we follow for passing one another on the sidewal[ ]holding open doors, getting in line at the deli, acknowledging someone else's right to a ca[ ]making just the right amount of eye contact with drivers as you cross the street at a bu[ ]intersection, and generally being considerate of our fellow human beings while still asserti[ ]our own right to take up a certain amount of space and time?

No matter where we live, our lives are guided and shaped by unwritten rules—so many [ ]them, in fact, that we couldn't write them all down if we tried. Nevertheless, we expe[ ]reasonable people to know them all. Complicating matters, we also expect reasonable peop[ ]to know which of the many rules that *have* been written down are OK to ignore. When[ ]graduated from high school, for example, I joined the Navy and spent the next four yea[ ]completing my officer training at the Australian Defence Force Academy. The academy ba[ ]then was an intense place, replete with barking drill instructors, predawn push-ups, runnin[ ]around in the pouring rain with rifles, and of course lots and lots of rules. At first this ne[ ]life seemed bizarrely complicated and confusing. However, we quickly learned that althoug[ ]some of the rules were important, to be ignored at your peril, many were enforced wi[ ]something like a wink and a nod. Not that the punishments couldn't be severe. You cou[ ]easily get sentenced to seven days of marching around a parade ground for some min[ ]infraction like being late to a meeting or having a wrinkled bedcover. But what you we[ ]supposed to understand (although of course you weren't supposed to admit that yo[ ]understood it) was that life at the academy was more like a game than real life. Sometim[ ]you won, and sometimes you lost, and that was when you ended up on the drill square; b[ ]

whatever happened, you weren't supposed to take it personally. And sure enough, after about six months of acclimation, situations that would have terrified us on our arrival seemed entirely natural—it was now the rest of the world that seemed odd.

We've all had experiences like this. Maybe not quite as extreme as a military academy—which, twenty years later, sometimes strikes me as having happened in another life. But whether it's learning to fit in at a new school, or learning the ropes in a new job, or learning to live in a foreign country, we've all had to learn to negotiate new environments that at first seem strange and intimidating and filled with rules that we don't understand but eventually become familiar. Very often the formal rules—the ones that are written down—are less important than the informal rules, which just like the rule about subway seats may not even be articulated until we break them. Conversely, rules that we do know about may not be enforced, or may be enforced only sometimes depending on some other rule that we don't know about. When you think about how complex these games of life can be, it seems kind of amazing that we're capable of playing them at all. Yet in the way that young children learn a new language seemingly by osmosis, we learn to navigate even the most novel social environments more or less without even knowing that we're doing it.

COMMON SENSE

The miraculous piece of human intelligence that enables us to solve these problems is what we call common sense. Common sense is so ordinary that we tend to notice it only when it's missing, but it is absolutely essential to functioning in everyday life. Common sense is how we know what to wear when we go to work in the morning, how to behave on the street or the subway, and how to maintain harmonious relationships with our friends and coworkers. It tells us when to obey the rules, when to quietly ignore them, and when to stand up and challenge the rules themselves. It is the essence of social intelligence, and is also deeply embedded in our legal system, in political philosophy, and in professional training.

For something we refer to so often, however, common sense is surprisingly hard to pin down.[3] Roughly speaking, it is the loosely organized set of facts, observations, experiences, insights, and pieces of received wisdom that each of us accumulates over a lifetime, in the course of encountering, dealing with, and learning from, everyday situations. Beyond that, however, it tends to resist easy classification. Some commonsense knowledge is very general in nature—what the American anthropologist Clifford Geertz called an "ancient tangle of received practices, accepted beliefs, habitual judgments, and untaught emotions."[4] But common sense can also refer to more specialized knowledge, as with the everyday working knowledge of a professional, such as a doctor, a lawyer, or an engineer, that develops over years of training and experience. In his address to the annual meeting of the American Sociological Society in Chicago in 1946, Carl Taylor, then president of the association, put it as well as anyone:

By common sense I mean the knowledge possessed by those who live in the midst and are a part of the social situations and processes which sociologists seek to understand. The term thus used may be synonymous with folk knowledge, or it may be the knowledge possessed by engineers, by the practical politicians, by those who gather and publish news, or by others who handle or work with and must interpret and predict the

behavior or persons and groups.[5]

Taylor's definition highlights two defining features of common sense that seem differentiate it from other kinds of human knowledge, like science or mathematics. The fir of these features is that unlike formal systems of knowledge, which are fundamental theoretical, common sense is overwhelmingly *practical*, meaning that it is more concerne with providing answers to questions than in worrying about how it came by the answer From the perspective of common sense, it is good enough to know that something is true, that it is the way of things. One does not need to know why in order to benefit from the knowledge, and arguably one is better off not worrying about it too much. In contrast wit theoretical knowledge, in other words, common sense does not reflect on the world, bu instead attempts to deal with it simply "as it is."[6]

The second feature that differentiates common sense from formal knowledge is that whi the power of formal systems resides in their ability to organize their specific findings in logical categories described by general principles, the power of common sense lies in i ability to deal with every concrete situation on its own terms. For example, it is a matter common sense that what we wear or do or say in front of our boss will be different from ho we behave in front of our friends, our parents, our parents' friends, or our friends' parent But whereas a formal system of knowledge would try to derive the appropriate behavior all these situations from a single, more general "law," common sense just "knows" what th appropriate thing to do is in any particular situation, without knowing how it knows it.[7] It largely for this reason, in fact, that commonsense knowledge has proven so hard to replica in computers—because, in contrast with theoretical knowledge, it requires a relatively larg number of rules to deal with even a small number of special cases. Let's say, for exampl that you wanted to program a robot to navigate the subway. It seems like a relatively simp task. But as you would quickly discover, even a single component of this task such as th "rule" against asking for another person's subway seat turns out to depend on a comple variety of other rules—about seating arrangements on subways in particular, about poli behavior in public in general, about life in crowded cities, and about general-purpose norm of courteousness, sharing, fairness, and ownership—that at first glance seem to have little do with the rule in question.

Attempts to formalize commonsense knowledge have all encountered versions of th problem—that in order to teach a robot to imitate even a limited range of human behavi you would have to, in a sense, teach it *everything* about the world. Short of that, the endle subtle distinctions between the things that matter, the things that are supposed to matter b don't, and the things that may or may not matter depending on other things, would alway eventually trip up even the most sophisticated robot. As soon as it encountered a situatio that was slightly different from those you had programmed it to handle, it would have n idea how to behave. It would stick out like a sore thumb. It would always be screwing up.[8]

People who lack common sense are a bit like the hapless robot in that they never seem understand what it is that they should be paying attention to, and they never seem understand what it is that they don't understand. And for exactly the same reason th programming robots is hard, it's surprisingly hard to explain to someone lacking in commo sense what it is that they're doing wrong. You can take them back through various example of when they said or did the wrong thing, and perhaps they'll be able to avoid making exact

those errors again. But as soon as anything is different, they're effectively back to square on
We had a few cadets like that at the academy: otherwise perfectly intelligent, compete
people who just couldn't seem to figure out how to play the game. Everyone knew who the
were, and everyone could see that they just didn't get it. But because it wasn't exactly clea
what it was that they didn't get, we were unable to help them. Bewildered and overwhelme
most of them eventually left.

NOT COMMON AT ALL

As remarkable as it is, common sense exhibits some mysterious quirks, one of the mo
striking of which is how much it varies over time, and across cultures. Several years ago, f
example, an enterprising group of economists and anthropologists set out to test ho
different cultures play a particular kind of game, called an ultimatum game. The game goe
something like this: First, pick two people and give one of them $100. That person then ha
to propose a split of the money between himself and the other player, ranging from offerin
them the whole amount to nothing at all. The other player then gets to accept the deal
reject it. If the second player accepts the deal, they get what they were offered and bot
players go on their merry way. But if they reject the offer, neither player gets anythin
hence the "ultimatum."

In hundreds of these experiments conducted in industrialized societies, researchers ha
already demonstrated that most players propose a fifty-fifty split, and offers of less than $3
are typically rejected. Economists find this behavior surprising because it conflicts with the
standard notion of economic rationality. Even a single dollar, the reasoning goes, is bette
than nothing at all, so from a strictly rational perspective, recipients ought to accept any off
above zero. And knowing this, rational "proposers" ought to offer the least they can get awa
with—namely, one dollar. Of course, a moment's thought quickly suggests why people pla
the way they do—namely that it doesn't seem fair to exploit a situation just because you ca
Recipients being offered less than a third therefore feel taken advantage of and so opt to wa
away from even a substantial sum of money in order to teach miserly proposers a lesson. An
anticipating this response, proposers tend to offer what they assume the recipient wi
consider a fair split.

If your reaction to this breakthrough insight is that economists need to get out a litt
more, then you're not alone. If anything seems like common sense, it's that people care abo
fairness as well as money—sometimes even more so. But when the experimenters replicate
the game in fifteen small-scale preindustrial societies across five continents, they found th
people in different societies have very different ideas about what counts as fair. At or
extreme, the Machiguenga tribe of Peru tended to offer only about a quarter of the tot
amount, and virtually no offers were refused. At the other extreme, the Au and Gnau tribes
Papua New Guinea tended to make offers that were even better than fifty-fifty, bu
surprisingly these "hyperfair" offers tended to get rejected just as frequently as unfair offers

What explains these differences? As it turns out, the Au and Gnau tribes had lon
established customs of gift exchange, according to which receiving a gift obligates th
receiver to reciprocate at some point in the future. Because there was no equivalent of th
ultimatum game in the Au or Gnau societies, they simply "mapped" the unfamiliar interactio
onto the most similar social exchange they could think of—which happened to be gi

exchange—and responded accordingly. Thus what might have seemed like free money to a Western participant looked to an Au or Gnau participant very much like an unwante obligation. The Machiguenga, by contrast, live in a society in which the only relationsh bonds that carry any expectation of loyalty are with immediate family members. Whe playing the ultimatum game with a stranger, therefore, Machiguenga participants—aga mapping the unfamiliar onto the familiar—saw little obligation to make fair offers, an experienced very little of the resentment that would well up in a Western player upon bein presented with a split that was patently unequal. To them, even low offers were seen as good deal.

Once you understand these features of Au, Gnau, and Machiguenga cultures, their puzzlin behavior starts to seem entirely reasonable—commonsense even. And that's exactly what was. Just as we reflexively regard fairness and reciprocity as commonsense principles in ou world that should be respected in general, and should be defended when violated witho good reason, so the people of the fifteen preindustrial societies have their own implicit set understandings about how the world is supposed to work. Those understandings might different from ours. But once they have been accepted, their commonsense logic works exactly the same way as ours does. It is simply what any reasonable person would do if the had grown up in that culture.

What these results reveal is that common sense is "common" only to the extent that tw people share sufficiently similar social and cultural experiences. Common sense, in oth words, depends on what the sociologist Harry Collins calls collective tacit knowledg meaning that it is encoded in the social norms, customs, and practices of the world. According to Collins, the acquisition of this type of knowledge can be learned only participating in society itself—and that's why it is so hard to teach to machines. But it als means that even among humans, what seems reasonable to one might seem curious, bizarr or even repugnant to another. For example, as Clifford Geertz, the anthropologist, ha described, the treatment of hermaphroditic children has varied dramatically across differe times and cultures. The Romans abhorred and killed them; the Greeks tolerated them; th Navajo revered them; and the east African Pokot tribe regarded them simply as "mistakes to be kept around or discarded in the same way they might keep or throw out a flawed pot. Likewise, practices including human slavery, sacrifice, cannibalism, foot binding, and fema genital mutilation that are reviled in most contemporary cultures have all been (and in som cases, still are) considered entirely legitimate in different times and places.

Another important consequence of the socially embedded nature of common sense is th disagreements over matters of common sense can be surprisingly difficult to resolve. Fo example, it may seem remarkable to people who have grown up with the impression th New York is a crime-ridden cesspool, or at the very least a cold, hard-edged city full people you can't trust, that, according to a recent news story, there is a small cadre Manhattan residents who don't lock their doors. As the article makes clear, most people the city think that the "no lock people" are crazy. As one woman said, "I live in a high-ris with a doorman, I've been there fifteen years, and I've never heard of a burglary in th building. But that has absolutely nothing to do with it—it's common sense [to lock you door]." Yet the only thing that seems shocking to the people who don't lock their doors that anyone else would be shocked by it.[12]

What's curious about this story is that the language of the people involved almost precise[ly] mirrors the experiences of Geertz, who noted in his study of witchcraft in Java that "whe[n] the whole family of a Javanese boy tells me that the reason he has fallen out of a tree a[nd] broken his leg is that the spirit of his deceased grandfather pushed him out because som[e] ritual duty toward the grandfather has been inadvertently overlooked, that, so far as they a[re] concerned, is the beginning, the middle, and the end of the matter: it is precisely what the[y] think has occurred, it is all they think has occurred, and they are puzzled only at m[y] puzzlement at their lack of puzzlement." Disagreements over matters of common sense, [in] other words, are hard to resolve because it's unclear to either side on what grounds one ca[n] even conduct a reasonable argument. Whether the issue is a Western anthropologi[st] discussing witchcraft with preindustrial tribes in Indonesia, New Yorkers disagreeing abo[ut] door locks, or the NRA disagreeing with the Brady Campaign over the sorts of guns th[at] Americans ought to be able to buy, whatever it is that people believe to be a matter [of] common sense, they believe it with absolute certainty. They are puzzled only at the fact th[at] others disagree.[13]

SOME RESERVATIONS

That what is self-evident to one person can be seen as silly by another should give us paus[e] about the reliability of common sense as a basis for understanding the world. How can we [be] confident that what we believe is right when someone else feels equally strongly that it['s] wrong—especially when we can't articulate why we think we're right in the first place? [Of] course, we can always write them off as crazy or ignorant or something and therefore n[ot] worth paying attention to. But once you go down that road, it gets increasingly hard [to] account for why we ourselves believe what we do. Consider, for example, that since 199[?] support among the general public for allowing same-sex couples to marry has almost double[d] from 25 percent to 45 percent.[14] Presumably those of us who changed our minds over th[is] period do not think that we were crazy fourteen years ago, but we obviously think that w[e] were wrong. So if something that seemed so obvious turned out to be wrong, what else th[at] we believe to be self-evident now will seem wrong to us in the future?

Once we start to examine our own beliefs, in fact, it becomes increasingly unclear eve[n] how the various beliefs we espouse at any given time fit together. Most people, for exampl[e,] consider their own views about politics to be derived from a single coherent worldview: "I'[m] a moderate liberal" or "I'm a diehard conservative," and so on. If that were true, howeve[r,] then one would expect that people who identify as liberals would tend to espouse th[e] "liberal" perspective on most matters, and that conservatives would espouse a consistent[ly] different view. Yet research finds that regardless of whether people identify themselves [as] liberals or conservatives, what they think about any one issue, like, say, abortion, ha[s] relatively little relation to what they believe about other issues, such as the death penalty [or] illegal immigration. In other words, we have the impression that our particular beliefs are a[ll] derived from some overarching philosophy, but the reality is that we arrive at them qui[te] independently, and often haphazardly.[15]

The same difficulty of reconciling what, individually, appear to be self-evident belie[fs] shows up even more clearly in the aphorisms that we invoke to make sense of the world. A[s] sociologists are fond of pointing out, many of these aphorisms appear to be dire[ctly]

contradictions of each other. Birds of a feather flock together, but opposites attract. Absence indeed makes the heart grow fonder, but out of sight is out of mind. Look before you leap, but he who hesitates is lost. Of course, it is not necessarily the case that these beliefs are contradictory—because we invoke different aphorisms in different circumstances. But because we never specify the conditions under which one aphorism applies versus another, we have no way of describing what it is that we really think or why we think it. Common sense, in other words, is not so much a worldview as a grab bag of logically inconsistent, often contradictory beliefs, each of which seems right at the time but carries no guarantee of being right any other time.

THE MISUSE OF COMMON SENSE

The fragmented, inconsistent, and even self-contradictory nature of common sense does not generally present a problem in our everyday lives. The reason is that everyday life is effectively broken up into small problems, grounded in very specific contexts that we can solve more or less independently of one another. Under these circumstances, being able to connect our thought processes in a logical manner isn't really the point. It doesn't really matter that absence makes the heart grow fonder in one situation, and that out of sight is out of mind in the next. In any given situation we know the point we're trying to make, or the decision we want to support, and we choose the appropriate piece of commonsense wisdom to apply to it. If we had to explain how all our explanations, attitudes, and commonsense beliefs fit together, we would encounter all kinds of inconsistencies and contradictions. But because our experience of life rarely forces us to perform this task, it doesn't really matter how difficult it would be.

Where it does start to matter, however, is when we use common sense to solve problems that are *not* grounded in the immediate here and now of everyday life—problems that involve anticipating or managing the behavior of large numbers of people, in situations that are distant from us either in time or space. This may sound like an unlikely thing to do, but in fact we do it all the time. Whenever we read a newspaper and try to understand events playing out in some foreign country—the Israel-Palestine conflict, the unfolding insurgency in Iraq, or the seemingly endless conflict in Afghanistan—we are implicitly using our commonsense reasoning to infer the causes and explanations of the events we're reading about. Whenever we form an opinion about financial reform or healthcare policy, we are implicitly using our commonsense reasoning to speculate about how different rules and incentives will affect the various parties' behavior. And whenever we argue about politics or economics or the law, we are implicitly using our commonsense reasoning to reach conclusions about how society will be affected by whatever policy or proposal is being debated.

In none of these cases are we using our common sense to reason about how we should behave in the here and now. Rather, we are using it to reason about how other people behaved—or will behave—in circumstances about which we have at best an incomplete understanding. At some level we understand that the world is complicated, and that everything is somehow connected to everything else. But when we read some story about reforming the healthcare system, or about banker bonuses, or about the Israel-Palestine conflict, we don't try to understand how all these different problems fit together. We just

focus on the one little piece of the huge underlying tapestry of the world that's bei[ng] presented to us at that moment, and form our opinion accordingly. In this way, we can fl[ip] through the newspaper while drinking our morning cup of coffee and develop twent[y] different opinions about twenty different topics without breaking a sweat. It's all ju[st] common sense.

It may not matter much, of course, what conclusions ordinary citizens reach about the sta[te] of the world in the privacy of their own homes, based on what they're reading in th[e] newspaper or arguing about with their friends. So it may not matter much that the way w[e] reason about the problems of the world is poorly suited to the nature of the problem[s] themselves. But ordinary citizens are not the only ones who apply commonsense reasoning [to] social problems. When policy makers sit down, say, to design some scheme to allevia[te] poverty, they invariably rely on their own commonsense ideas about why it is that poo[r] people are poor, and therefore how best to help them. As with all commonsense explanation[s] it is likely that everyone will have his or her own views, and that these views will b[e] logically inconsistent or even contradictory. Some may believe that people are poor becaus[e] they lack certain necessary values of hard work and thrift, while others may think they ar[e] genetically inferior, and others still may attribute their lack of wealth to lack [of] opportunities, inferior systems of social support, or other environmental factors. All thes[e] beliefs will lead to different proposed solutions, not all of which can be right. Yet polic[y] makers empowered to enact sweeping plans that will affect thousands or millions of peop[le] are no less tempted to trust their intuition about the causes of poverty than ordinary citize[ns] reading the newspaper.

A quick look at history suggests that when common sense is used for purposes beyond th[e] everyday, it can fail spectacularly. As the political scientist James Scott writes in *Seeing Like [a]* *State*, the late nineteenth and early twentieth centuries were characterized by pervasiv[e] optimism among engineers, architects, scientists, and government technocrats that th[e] problems of society could be solved in the same way that the problems of science an[d] engineering had been solved during the Enlightenment and the industrial revolutio[n.] According to these "high modernists," the design of cities, the management of natur[al] resources, even the business of running an entire economy were all within the scope [of] "scientific" planning. As one of the undisputed high priests of modernism, the architect L[e] Corbusier, wrote in 1923, "the plan is generator; without it poverty, disorder, willfulne[ss] reign supreme."[16]

Naturally, the high modernists didn't describe what they were doing as an exercise in usi[ng] their common sense, preferring instead to clothe their ambitions in the language of scienc[e.] But as Scott points out, this scientific aura was a mirage. In reality there was no science [of] planning—just the opinions of individual planners who relied on their intuition to specula[te] about how their plans would play out in the real world. No one doubts that men like L[e] Corbusier were brilliant and original thinkers. Nevertheless, the outcomes of their plans, lik[e] Soviet collectivization or Le Corbusier's Brasilia, were often disastrous; and some of them[,] like the social engineering of Nazism or apartheid in South Africa, are now regarded amon[g] the great evils of the twentieth century. Moreover, even when these plans did succeed, the[y] often did so in spite of themselves, as individuals on the ground figured out ways to creat[e a] reasonable outcome by ignoring, circumventing, or even undermining the plan itself.[17]

Looking back, it may seem as if the failures of high modernism—whether centrally planne[d] economies or centrally designed cities—are a thing of the past, a product of a naïve an[d] simplistic belief in science that we have since outgrown. Yet politicians, bureaucrat[s,] architects, and regulators continue to make essentially the same mistake all the time. As th[e] economist William Easterly has argued, the foreign aid community has been dominated fo[r] the past fifty years by large, bureaucratic organizations that are in turn run by powerf[ul] individuals whose ideas about what should and should not work inevitably play a large ro[le] in determining how resources will be devoted. Just as with the high modernists before the[m,] these "planners," as Easterly calls them, are well-meaning and intelligent people who a[re] often passionately devoted to the task of helping the people of the developing world. Yet [in] spite of the trillions of dollars of aid that planners have devoted to economic developmen[t,] there is shockingly little evidence that the recipients are better off for it.[18]

Closer to home, and over roughly the same period of time, urban planners in the Unite[d] States have repeatedly set out to "solve" the problem of urban poverty and have repeated[ly] failed. As the journalist and urban activist Jane Jacobs put it fifty years ago, "There is [a] wistful myth that if only we had enough money to spend—the figure is usually put at [a] hundred billion dollars—we could wipe out all our slums in ten years.… But look what w[e] have built with the first several billions: Low-income projects that have become wors[e] centers of delinquency, vandalism and general social hopelessness than the slums they we[re] supposed to replace."[19] It is ironic that around the same time that Jacobs reached th[is] conclusion, work began on the Robert Taylor Homes in Chicago, the largest public housi[ng] project ever built. And sure enough, as the sociologist Sudhir Venkatesh describes in *America[n] Project*, what started out as a high-minded and carefully thought-out plan to help inner-cit[y] largely African American families rise up into the middle class became a debacle [of] dilapidated buildings, overcrowded apartments and playgrounds, concentrated poverty, an[d] eventually gang violence.[20]

The large scale and disruptive nature of economic and urban development plans make the[m] especially prone to failure, but many of the same criticisms have been leveled at governme[nt] plans to improve public education, reform healthcare services, manage public resource[s,] design local regulations, or decide foreign policy.[21] Nor are governments alone in sufferi[ng] from extreme planning failures. Corporations are rarely as large as governments, so the[ir] failures tend not to attract the same kind of scrutiny—although the near collapse of t[he] financial system in 2008–2009 comes close. There are also so many more corporations th[an] governments that it's always possible to find success stories, thereby perpetuating the vie[w] that the private sector is better at planning than the government sector. But as a number [of] management scholars have shown in recent years, corporate plans—whether strategic bet[s,] mergers and acquisitions, or marketing campaigns—also fail frequently, and for much t[he] same reasons that government plans do.[22] In all these cases, that is, a small number of peop[le] sitting in conference rooms are using their own commonsense intuition to predict, manage, [or] manipulate the behavior of thousands or millions of distant and diverse people whos[e] motivations and circumstances are very different from their own.[23]

The irony of all this is that even as we observe the mistakes of politicians, planners, an[d] others, our reaction is not to criticize common sense, but instead to demand more of it. At th[e] World Economic Forum meeting in Davos in early 2009, for example, in the darkest depths [of]

global financial crisis, one indignant audience member announced to the audience, "What w[e] need now is a return to common sense!" It's an appealing notion, and drew loud applause [at] the time, but I couldn't help wondering what it was that he meant by it. After all, two yea[rs] earlier at the 2007 Davos meeting, much the same mix of businesspeople, politicians, an[d] economists were congratulating one another on having generated astonishing levels of weal[th] and unprecedented stability of the financial sector. Did anyone suspect that they ha[d] somehow taken leave of their common sense? And if not, then how exactly would it help [to] return to it? If anything, in fact, what the history of financial crises, both before and after th[e] advent of high-technology trading, ought to teach us is that—like truth in war—it is commo[n] sense, not computer models, that is the first casualty of a financial mania.[24] And much th[e] same is true of failures in politics, business, and marketing. Bad things happen not becaus[e] we forget to use our common sense, but rather because the incredible effectiveness [of] common sense in solving the problems of everyday life causes us to put more faith in it tha[n] it can bear.

TOO MUCH INTUITION

But if common sense is so bad at dealing with complex social phenomena like politic[al] conflicts, healthcare economics, or marketing campaigns, why are its shortcomings not mo[re] obvious to us? After all, when it comes to the physical world, we also have plenty of intuiti[on] that we use to solve everyday problems—think of all the intuitive physics that is required [to] chase down and catch a fly baseball. But unlike in the social world, we have learned ove[r] time that our "commonsense physics" is easily tripped up. For example, common sense tel[ls] us that heavy objects fall under the force of gravity. But consider the following: A man stand[s] on a perfectly flat plain holding a bullet in his left hand and a pistol, loaded with an identic[al] bullet, in his right. Holding both pistol and bullet at the same height, he simultaneously fire[s] the gun and drops the bullet. Which bullet will hit the ground first? Elementary high scho[ol] physics will tell you that in fact the two bullets will hit the ground at exactly the *same* tim[e.] But even knowing this, it is hard not to think that the bullet from the gun is somehow kept u[p] for longer by its velocity.

The physical world is filled with examples like this that defy commonsense reasoning. Wh[y] does water spiral down the toilet in opposite directions in the northern and souther[n] hemispheres? Why do you see more shooting stars after midnight? And when floating i[ce] melts in a glass, does the water level go up or down? Even if you really do understand th[e] physics behind some of these questions, it is still easy to get them wrong, and they're nothi[ng] compared to the really strange phenomena of quantum mechanics and relativity. But [as] frustrating as it can be for physics students, the consistency with which our commonsen[se] physics fails us has one great advantage for human civilization: It forces us to do science. [In] science, we accept that if we want to learn how the world works, we need to test ou[r] theories with careful observations and experiments, and then trust the data no matter wh[at] our intuition says. And as laborious as it can be, the scientific method is responsible f[or] essentially all the gains in understanding the natural world that humanity has made over th[e] past few centuries.

But when it comes to the human world, where our unaided intuition is so much better tha[n] it is in physics, we rarely feel the need to use the scientific method. Why is it, for exampl[e,]

that most social groups are so homogeneous in terms of race, education level, and even gender? Why do some things become popular and not others? How much does the media influence society? Is more choice better or worse? Do taxes stimulate the economy? Social scientists are endlessly perplexed by these questions, yet many people feel as though they could come up with perfectly satisfactory explanations themselves. We all have friends, most of us work, and we generally buy things, vote, and watch TV. We are constantly immersed in markets, politics, and culture, and so are intimately familiar with how they work—or at least that is how it seems to us. Unlike problems in physics, biology, and so on, therefore, when the topic is human or social behavior, the idea of running expensive, time-consuming "scientific" studies to figure out what we're pretty sure we already know seems largely unnecessary.

HOW COMMON SENSE FAILS US

Without a doubt, the experience of participating in the social world greatly facilitates our ability to understand it. Were it not for the intimate knowledge of our own thought processes, along with countless observations of the words, actions, and explanations of others —both experienced in person and also learned remotely—the vast intricacies of human behavior might well be inscrutable. Nevertheless, the combination of intuition, experience, and received wisdom on which we rely to generate commonsense explanations of the social world also disguises certain errors of reasoning that are every bit as systematic and pervasive as the errors of commonsense physics. Part One of this book is devoted to exploring these errors, which fall into three broad categories.

The first type of error is that when we think about why people do what they do, we invariably focus on factors like incentives, motivations, and beliefs, of which we are consciously aware. As sensible as it sounds, decades of research in psychology and cognitive science have shown that this view of human behavior encompasses just the tip of the proverbial iceberg. It doesn't occur to us, for example, that the music playing in the background can influence our choice of wine in the liquor store, or that the font in which a statement is written may make it more or less believable; so we don't factor these details into our anticipation of how people will react. But they do matter, as do many other apparently trivial or seemingly irrelevant factors. In fact, as we'll see, it is probably impossible to anticipate everything that might be relevant to a given situation. The result is that no matter how carefully we try to put ourselves in someone else's shoes, we are likely to make serious mistakes when predicting how they'll behave anywhere outside of the immediate here and now.

If the first type of commonsense error is that our mental model of individual behavior is systematically flawed, the second type is that our mental model of collective behavior is even worse. The basic problem here is that whenever people get together in groups—whether at social events, workplaces, volunteer organizations, markets, political parties, or even entire societies—they interact with one another, sharing information, spreading rumors, passing along recommendations, comparing themselves to their friends, rewarding and punishing each other's behaviors, learning from the experience of others, and generally influencing one another's perspectives about what is good and bad, cheap and expensive, right and wrong. As sociologists have long argued, these influences pile up in unexpected

ways, generating collective behavior that is "emergent" in the sense that it cannot be understood solely in terms of its component parts. Faced with such complexity, however, commonsense explanations instinctively fall back on the logic of individual action. Sometimes we invoke fictitious "representative individuals" like "the crowd," "the market," "the workers," or "the electorate," whose actions stand in for the actions and interactions of the many. And sometimes we single out "special people," like leaders, visionaries, or "influencers" to whom we attribute all the agency. Regardless of which trick we use, however, the result is that our explanations of collective behavior paper over most of what is actually happening.

The third and final type of problem with commonsense reasoning is that we learn less from history than we think we do, and that this misperception in turn skews our perception of the future. Whenever something interesting, dramatic, or terrible happens—Hush Puppies become popular again, a book by an unknown author becomes an international best seller, the housing bubble bursts, or terrorists crash planes into the World Trade Center—we instinctively look for explanations. Yet because we seek to explain these events only after the fact, our explanations place far too much emphasis on what actually happened relative to what might have happened but didn't. Moreover, because we only try to explain events that strike us as sufficiently interesting, our explanations account only for a tiny fraction even of the things that do happen. The result is that what appear to us to be causal explanations are in fact just stories—descriptions of what happened that tell us little, if anything, about the mechanisms at work. Nevertheless, because these stories have the form of causal explanations, we treat them as if they have predictive power. In this way, we deceive ourselves into believing that we can make predictions that are impossible, even in principle.

Commonsense reasoning, therefore, does not suffer from a single overriding limitation but rather from a combination of limitations, all of which reinforce and even disguise one another. The net result is that common sense is wonderful at *making sense* of the world, but not necessarily at understanding it. By analogy, in ancient times, when our ancestors were startled by lightning bolts descending from the heavens, accompanied by claps of thunder, they assuaged their fears with elaborate stories about the gods, whose all-too-human struggles were held responsible for what we now understand to be entirely natural processes. By explaining away otherwise strange and frightening phenomena in terms of stories they did understand, they were able to make sense of them, effectively creating an illusion of understanding about the world that was enough to get them out of bed in the morning. All of which is fine. But we would not say that our ancestors "understood" what was going on, in the sense of having a successful scientific theory. Indeed, we tend to regard the ancient mythologies as vaguely amusing.

What we don't realize, however, is that common sense often works just like mythology. By providing ready explanations for whatever particular circumstances the world throws at us, commonsense explanations give us the confidence to navigate from day to day and relieve us of the burden of worrying about whether what we think we know is really true, or is just something we happen to believe. The cost, however, is that we think we have understood things that in fact we have simply papered over with a plausible-sounding story. And because this illusion of understanding in turn undercuts our motivation to treat social problems the way we treat problems in medicine, engineering, and science, the unfortunate result is that

common sense actually inhibits our understanding of the world. Addressing this problem [is] not easy, although in Part Two of the book I will offer some suggestions, along with example[s] of approaches that are already being tried in the worlds of business, policy, and science. Th[e] main point, though, is that just as an unquestioning belief in the correspondence betwee[n] natural events and godly affairs had to give way in order for "real" explanations to b[e] developed, so too, real explanations of the social world will require us to examine what it [is] about our common sense that misleads us into thinking that we know more than we do.[25]

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