

Chapter 2

The View from in Here

But, O, how bitter a thing it is to look into happiness
through another man's eyes!
--Shakespeare, *As You Like It*

Lori and Reba Schappel may be twins, but they are very different people. Reba is a somewhat shy teetotaler who has recorded an award-winning album of country music. Lori, who is outgoing, wisecracking, and rather fond of strawberry daiquiris, works in a hospital and wants someday to marry and have children. They occasionally argue, as sisters do, but most of the time they get on well, complimenting each other, teasing each other, and finishing each other's sentences. In fact, there are just two unusual things about Lori and Reba. The first is that they share a blood supply, part of a skull, and some brain tissue, having been joined at the forehead since birth. One side of Lori's forehead is attached to one side of Reba's, and they have spent every moment of their lives locked together, face-to-face. The second unusual thing about Lori and Reba is that they are happy—not merely resigned or contented, but joyful, playful, and optimistic.¹ Their unusual life presents many challenges, of course, but as they often note, whose doesn't? When asked about the possibility of undergoing surgical separation, Reba speaks for both of them: "Our point of view is no, straight out no. Why would you want to do that? For all the money in China, why? You'd be ruining two lives in the process."²

So here's the question: If this were your life rather than theirs, how would you feel? If you said, "Joyful, playful, and optimistic," then you are not playing the game and I am going to give you another chance. Try to be honest instead of correct. The honest answer is "Despondent, desperate, and depressed." Indeed, it seems clear that no right-minded person could *really* be happy under such circumstances, which is why the conventional medical wisdom has it that conjoined twins should be separated at birth, even at the risk of killing one or both. As a prominent medical historian wrote: "Many singletons, especially surgeons, find it inconceivable that life is worth living as a conjoined twin, inconceivable that one would not be willing to risk all—mobility, reproductive ability, the life of one or both twins—to try for separation."³ In other words, not only does everyone know that conjoined twins will be dramatically less happy than normal people, but everyone also knows that conjoined lives are so utterly worthless that dangerous separation surgeries are an ethical imperative. And yet, standing against the backdrop of our certainty about these matters are the twins themselves. When we ask Lori and Reba how they feel about their situation, they tell us that they wouldn't have it any other way. In an exhaustive search of the medical literature, the same medical historian found the "desire to remain together to be so widespread among communicating conjoined twins as to be practically universal."⁴ Something is terribly wrong here. But what?

There seem to be just two possibilities. Someone—either Lori and Reba, or everyone else in the world—is making a dreadful mistake when they talk about happiness. Because we are the everyone else in question, it is only natural that we should be attracted to the former conclusion, dismissing the twins' claim to happiness with offhand rejoinders such as "Oh, they're just saying that" or "They may think they're happy, but they're not" or the ever popular "They don't know what happiness really is" (usually spoken as if we do). Fair enough. But like the claims they dismiss, these rejoinders are also claims—scientific claims and philosophical claims—that presume answers to questions that have vexed scientists and philosophers for millennia. What are we all talking about when we make such claims about happiness?

Dancing About Architecture

There are thousands of books on happiness, and most of them start by asking what happiness *really* is. As readers quickly learn, this is approximately equivalent to beginning a pilgrimage by marching directly into the first available tar pit, because happiness *really* is nothing more or less than a word that

we word makers can use to indicate anything we please. The problem is that people seem pleased to use this one word to indicate a host of different things, which has created a tremendous terminological mess on which several fine scholarly careers have been based. If one slops around in this mess long enough, one comes to see that most disagreements about what happiness *really is* are semantic disagreements about whether the word ought to be used to indicate *this* or *that*, rather than scientific or philosophical disagreements about the nature of this and that. What are the *this* and the *that* that happiness most often refers to? The word *happiness* is used to indicate at least three related things, which we might roughly call *emotional happiness*, *moral happiness*, and *judgmental happiness*.

Feeling Happy

Emotional happiness is the most basic of the trio—so basic, in fact, that we become tongue-tied when we try to define it, as though some bratty child had just challenged us to say what the word *the* means and in the process made a truly compelling case for corporal punishment. Emotional happiness is a phrase for a *feeling*, an *experience*, a *subjective state*, and thus it has no objective referent in the physical world. If we ambled down to the corner pub and met an alien from another planet who asked us to define that feeling, we would either point to the objects in the world that tend to bring it about, or we would mention other feelings that it is like. In fact, this is the only thing we can do when we are asked to define a subjective experience.

Consider, for instance, how we might define a very simple subjective experience, such as *yellow*. You may think *yellow* is a color but it isn't. It's a psychological state. It is what human beings with working visual apparatus experience when their eyes are struck by light with a wavelength of 580 nanometers. If our alien friend at the pub asked us to define what we were experiencing when we claimed to be seeing yellow, we would probably start by pointing to a school bus, a lemon, a rubber ducky, and saying, "See all those things? The thing that is common to the visual experiences you have when you look at them is called yellow." Or we might try to define the experience called yellow in terms of other experiences. "Yellow? Well, it is sort of like the experience of orange, with a little less of the experience of red." If the alien confided that it could not figure out what the duck, the lemon, and the school bus had in common, and that it had never had the experience of orange or red, then it would be time to order another pint and change the topic to the universal sport of ice hockey, because there is just no other way to define yellow. Philosophers like to say that subjective states are "irreducible," which is to say that nothing we point to, nothing we can compare them with, and nothing we can say about their neurological underpinnings can fully substitute for the experiences themselves.⁵ The musician Frank Zappa is reputed to have said that writing about music is like dancing about architecture, and so it is with talking about yellow. If our new drinking buddy lacks the machinery for color vision, then our experience of yellow is one that it will never share—or never know it shares—no matter how well we point and talk.⁶

Emotional happiness is like that. It is the feeling common to the feelings we have when we see our new granddaughter smile for the first time, receive word of a promotion, help a wayward tourist find the art museum, taste Belgian chocolate toward the back of our tongue, inhale the scent of our lover's shampoo, hear that song we used to like so much in high school but haven't heard in years, touch our cheek to kitten fur, cure cancer, or get a really good snootful of cocaine. These feelings are different, of course, but they also have something in common. A piece of real estate is not the same as a share of stock, which is not the same as an ounce of gold, but all are forms of *wealth* that occupy different points on a scale of *value*. Similarly, the cocaine experience is not the kitten-fur experience, which is not the promotion experience, but all are forms of feeling that occupy different points on a scale of *happiness*. In each of these instances, an encounter with something in the world generates a roughly similar pattern of neural activity,⁷ and thus it makes sense that there is something common to our *experiences* of each—some conceptual coherence that has led human beings to group this hodgepodge of occurrences together in the same linguistic category for as long as anyone can remember. Indeed, when researchers analyze how all the words in a language are related to the others, they inevitably find that the positivity of the

words—that is, the extent to which they refer to the experience of happiness or unhappiness—is the single most important determinant of their relationships.⁸ Despite Tolstoy’s fine efforts, most speakers consider *war* to be more closely related to *vomit* than it is to *peace*.

Happiness, then, is the you-know-what-I-mean feeling. If you are a human being who lives in this century and shares some of my cultural conditioning, then my pointing and comparing will have been effective and you will know *exactly* which feeling I mean. If you are an alien who is still struggling with yellow, then happiness is going to be a real challenge. But take heart: I would be similarly challenged if you told me that on your planet there is a feeling common to the acts of dividing numbers by three, banging one’s head lightly on a doorknob, and releasing rhythmic bursts of nitrogen from any orifice at any time except on Tuesday. I would have no idea what that feeling is, and I could only learn the name and hope to use it politely in conversation. Because emotional happiness is an experience, it can only be approximately defined by its antecedents and by its relation to other experiences.⁹ The poet Alexander Pope devoted about a quarter of his *Essay on Man* to the topic of happiness, and concluded with this question: “Who thus define it, say they more or less *I* Than this, that happiness is happiness?”¹⁰

Emotional happiness may resist our efforts to tame it by description, but when we feel it, we have no doubt about its reality and its importance. Everyone who has observed human behavior for more than thirty continuous seconds seems to have noticed that people are strongly, perhaps even primarily, perhaps even single-mindedly, motivated to feel happy. If there has ever been a group of human beings who prefer despair to delight, frustration to satisfaction, and pain to pleasure, they must be very good at hiding because no one has ever seen them. People want to be happy, and all the other things they want are typically meant to be means to that end. Even when people forgo happiness in the moment—by dieting when they could be eating, or working late when they could be sleeping—they are usually doing so in order to increase its future yield. The dictionary tells us that to prefer is “to choose or want one thing rather than another *because it would be more pleasant*,” which is to say that the pursuit of happiness is built into the very definition of desire. In this sense, a preference for pain and suffering is not so much a diagnosable psychiatric condition as it is an oxymoron.

Psychologists have traditionally made striving toward happiness the centerpiece of their theories of human behavior because they have found that if they don’t, their theories don’t work so well. As Sigmund Freud wrote:

The question of the purpose of human life has been raised countless times; it has never yet received a satisfactory answer and perhaps does not admit of one. . . . We will therefore turn to the less ambitious question of what men show by their behavior to be the purpose and intention of their lives. What do they demand of life and wish to achieve in it? The answer to this can hardly be in doubt. They strive after happiness; they want to become happy and to remain so. This endeavor has two sides, a positive and a negative aim. It aims, on the one hand, at an absence of pain and displeasure, and, on the other, at the experiencing of strong feelings of pleasure.¹¹

Freud was an articulate champion of this idea but not its originator, and the same observation appears in some form or another in the psychological theories of Plato, Aristotle, Hobbes, Mill, Bentham, and others. The philosopher and mathematician Blaise Pascal was especially clear on this point:

All men seek happiness. This is without exception. Whatever different means they employ, they all tend to this end. The cause of some going to war and of others avoiding it, is the same desire in both, attended with different views. The will never takes the least step but to this object. This is the motive of every action of every man, even of those who hang themselves.¹²

Feeling Happy Because

If every thinker in every century has recognized that people seek emotional happiness, then how has so much confusion arisen over the meaning of the word? One of the problems is that many people consider the desire for happiness to be a bit like the desire for a bowel movement: something we all have, but not something of which we should be especially proud. The kind of happiness they have in mind is cheap and base—a vacuous state of “bovine contentment”¹³ that cannot possibly be the basis of a meaningful human life. As the philosopher John Stuart Mill wrote, “It is better to be a human being

dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied. And if the fool, or the pig, are a different opinion, it is because they only know their own side of the question.”¹⁴

The philosopher Robert Nozick tried to illustrate the ubiquity of this belief by describing a fictitious virtual-reality machine that would allow anyone to have any experience they chose, and that would conveniently cause them to forget that they were hooked up to the machine.¹⁵ He concluded that no one would willingly choose to get hooked up for the rest of his life because the happiness he would experience with such a machine would not be happiness at all. “Someone whose emotion is based upon egregiously unjustified and false evaluations we will be reluctant to term happy, however he feels.” In short, emotional happiness is fine for pigs, but it is a goal unworthy of creatures as sophisticated and capable as we.

Now, let’s take a moment to think about the difficult position that someone who holds this view is in, and let’s guess how they might resolve it. If you considered it perfectly tragic for life to be aimed at nothing more substantive and significant than a *feeling*, and yet you could not help but notice that people spend their days seeking *happiness*, then what might you be tempted to conclude? Bingo! You might be tempted to conclude that the word *happiness* does not indicate a good feeling but rather that it indicates a very special good feeling that can only be produced by very special means—for example, by living one’s life in a propel moral, meaningful, deep, rich, Socratic, and non-piglike way. Now *that* would be the kind of feeling one wouldn’t be ashamed to strive for. In fact, the Greeks had a word for this kind of happiness—*eudaimonia*—which translates literally as “good spirit” but which probably means something more like “human flourishing” or “life well lived.” For Socrates, Plato, Aristotle, Cicero, and even Epicurus (a name usually associated with piggish happiness), the only thing that could induce that kind of happiness was the *virtuous* performance of one’s duties, with the precise meaning of virtuous left for each philosopher to work out for himself. The ancient Athenian legislator Solon suggested that one could not say that a person was happy until the person’s life had ended because happiness is the result of living up to one’s potential—and how can we make such a judgment until we see how the whole thing turns out? A few centuries later, Christian theologians added a nifty twist to this classical conception: Happiness was not merely the *product* of a life of virtue but the *reward* for a life of virtue, and that reward was not necessarily to be expected in this lifetime.¹⁷

For two thousand years philosophers have felt compelled to identify happiness with virtue because that is the sort of happiness they think we *ought* to want. And maybe they’re right. But if living one’s life virtuously is a cause of happiness, it is not happiness itself, and it does us no good to obfuscate a discussion by calling both the cause and the consequence by the same name. I can produce pain by pricking your finger with a pin or by electrically stimulating a particular spot in your brain, and the two pains will be *identical* feelings produced by different means. It would do us no good to call the first of these real pain and the other *fake pain*. Pain is pain, no matter what causes it. By muddling causes and consequences, philosophers have been forced to construct tortured defenses of some truly astonishing claims—for example, that a Nazi war criminal who is basking on an Argentinean beach is not really *happy*, whereas the pious missionary who is being eaten alive by cannibals is. “Happiness will not tremble,” Cicero wrote in the first century BC, “however much it is tortured.”¹⁸ That statement may be admired for its moxie, but it probably doesn’t capture the sentiments of the missionary who was drafted to play the role of the entrée.

Happiness is a word that we generally use to indicate an experience and not the actions that give rise to it. Does it make any sense to say, “After a day spent killing his parents, Frank was happy”? Indeed it does. We hope there never was such a person, but the sentence is grammatical, well formed, and easily understood. Frank is a sick puppy, but if he says he is happy and he looks happy, is there a principled reason to doubt him? Does it make any sense to say, “Sue was happy to be in a coma”? No, of course not. If Sue is unconscious, she cannot be happy no matter how many good deeds she did before calamity struck. Or how about this one: “The computer obeyed all Ten Commandments and was happy as a clam”? Again, sorry, but no. There is some remote possibility that clams can be happy because there is

some remote possibility that clams have the capacity to feel. There may be something it is like to be a clam, but we can be fairly certain that there is nothing it is like to be a computer, and hence the computer cannot be happy no matter how many of its neighbor's wives it failed to covet.¹⁹ Happiness refers to feelings, virtue refers to actions, and those actions can cause those feelings. But not necessarily and not exclusively.

Feeling Happy About

The you-know-what-I-mean feeling is what people ordinarily mean by *happiness*, but it is not the only thing they mean. If philosophers have muddled the moral and emotional meanings of the word *happiness*, then psychologists have muddled the emotional and judgmental meanings equally well and often. For example, when a person says, "All in all, I'm happy about the way my life has gone," psychologists are generally willing to grant that the person is happy. The problem is that people sometimes use the word *happy* to express their beliefs about the merits of things, such as when they say, "I'm happy they caught the little bastard who broke my windshield," and they say things like this even when they are not feeling anything vaguely resembling pleasure. How do we know when a person is expressing a point of view rather than making a claim about her subjective experience? When the word *happy* is followed by the words *that* or *about*, speakers are usually trying to tell us that we ought to take the word *happy* as an indication not of their feelings but rather of their stances. For instance, when our spouse excitedly reveals that she has just been asked to spend six months at the company's new branch in Tahiti while we stay home and mind the kids, we may say, "I'm not happy, of course, but I'm happy that you're happy." Sentences such as these make high school English teachers apoplectic, but they are actually quite sensible if we can just resist the temptation to take every instance of the word *happy* as an instance of emotional happiness. Indeed, the first time we utter the word, we are letting our spouse know that we are most certainly not having the you-know-what-I-mean feeling (emotional happiness), and the second time we utter the word we are indicating that we approve of the fact that our spouse is (judgmental happiness). When we say we are happy about or happy that, we are merely noting that something is a potential source of pleasurable feeling, or a past source of pleasurable feeling, or that we realize it ought to be a source of pleasurable feeling but that it sure doesn't feel that way at the moment. We are not actually claiming to be experiencing the feeling or anything like it. It would be more appropriate for us to tell our spouse, "I am not happy, but I understand you are, and I can even imagine that were I going to Tahiti and were you remaining home with these juvenile delinquents, I'd be *experiencing* happiness rather than admiring yours." Of course, speaking like this requires that we forsake all possibility of human companionship, so we opt for the common shorthand and say we are happy *about* things even when we are feeling thoroughly distraught. That's fine, just as long as we keep in mind that we don't always mean what we say.

New Yeller

If we were to agree to reserve the word *happiness* to refer to that class of subjective emotional experiences that are vaguely described as *enjoyable* or *pleasurable*, and if we were to promise not to use that same word to indicate the morality of the actions one might take to induce those experiences or to indicate our judgments about the merits of those experiences, we might still wonder whether the happiness one gets from helping a little old lady across the street constitutes a different kind of emotional experience—bigger, better, deeper—than the happiness one gets from eating a slice of banana-cream pie. Perhaps the happiness one experiences as a result of good deeds feels different from that other sort. In fact, while we're at it, we might as well wonder whether the happiness one gets from eating banana-cream pie feels different from the happiness one gets from eating coconut-cream pie. Or from eating a slice of *this* banana-cream pie rather than a slice of *that* one. How can we tell whether subjective emotional experiences are different or the same?

The truth is that we can't—no more than we can tell whether the yellow experience we have when we look at a school bus is the same yellow experience that others have when they look at the same school

bus. Philosophers have flung themselves headlong at this problem for quite some time with little more than bruises to show for it,²⁰ because when all is said and done, the only way to measure precisely the similarity of two things is for the person who is doing the measuring to compare them side by side—that is, to *experience* them side by side. And outside of science fiction, no one can actually have another person’s experience. When we were children, our mothers taught us to call that looking-at-the-school-bus experience yellow, and being compliant little learners, we did as we were told. We were pleased when it later turned out that everyone else in the kindergarten claimed to experience yellow when they looked at a bus too. But these shared labels may mask the fact that our actual experiences of yellow are quite different, which is why many people do not discover that they are color-blind until late in life when an ophthalmologist notices that they do not make the distinctions that others seem to make. So while it seems rather unlikely that human beings have radically different experiences when they look at a school bus, when they hear a baby cry, or when they ~mell a former skunk, it is possible, and if you want to believe it, then you have every right and no one who values her time should try to reason with you.

Remembering Differences

I hope you aren’t giving up that easily. Perhaps the way to determine whether a pair of happinesses actually feel different is to forget about comparing the experiences of different minds and just ask someone who has experienced them both. I may never know if my experience of yellow is different from your experience of yellow, but surely I can tell that my experience of *yellow* is different from my experience of *blue* when I mentally compare the two. Right? Unfortunately, this strategy is more complicated than it looks. The nub of the problem is that when we say that we are mentally comparing two of our own subjective experiences, we are not actually having the two experiences at the same time. Rather, we are at best having one of them, having already had the other, and when an interrogator asks us which experience made us happier or whether the two happinesses were the same, we are at best comparing something we are currently experiencing with our *memory* of something we experienced in the past. This would be unobjectionable were it not for the fact that memories—especially memories of experiences—are notoriously unreliable, a fact that has been demonstrated by both magicians and scientists. First the magic. Look at the six royal cards in figure 4, and pick your favorite. No, don’t tell me. Keep it to yourself. Just look at your card, and say the name once or twice (or write it down) so that you’ll remember it for a few pages.

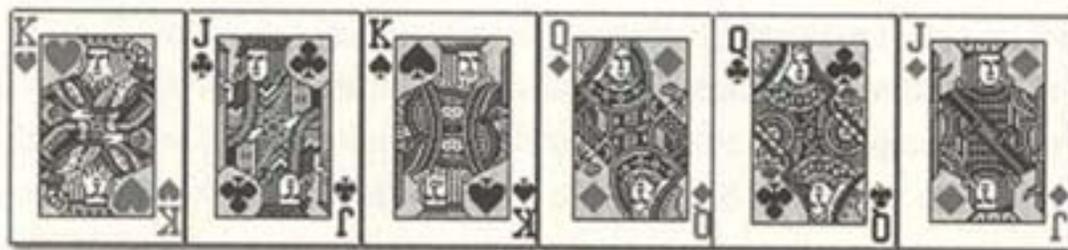


Fig. 4.

Good. Now consider how scientists have approached the problem of remembered experience. In one study, researchers showed volunteers a color swatch of the sort one might pick up in the paint aisle of the local hardware store and allowed them to study it for five seconds.²¹ Some volunteers then spent thirty seconds describing the color (describers), while other volunteers did not describe it (non-describers). All volunteers were then shown a lineup of six color swatches, one of which was the color they had seen thirty seconds earlier, and were asked to pick out the original swatch. The first interesting finding was that only 73 percent of the nondescribers were able to identify it accurately. In other words, fewer than three quarters of these folks could tell if *this* experience of yellow was the same as the experience of yellow they had had just a half-minute before. The second interesting finding was that describing the color impaired rather than improved performance on the identification task. Only 33

percent of the describers were able to accurately identify the original color. Apparently, the describers' verbal descriptions of their experiences "overwrote" their memories of the experiences themselves, and they ended up remembering not what they had experienced but what they had *said* about what they experienced. And what they had said was not clear and precise enough to help them recognize it when they saw it again thirty seconds later.

Most of us have been in this position. We tell a friend that we were disappointed with the house chardonnay at that trendy downtown bistro, or with the way the string quartet handled our beloved Bartok's Fourth, but the fact is that we are unlikely to be recalling how the wine actually tasted or how the quartet actually sounded when we make this pronouncement. Rather, we are likely to be recalling that as we left the concert, we mentioned to our companion that both the wine and the music had a promising start and a poor finish. Experiences of chardonnays, string quartets, altruistic deeds, and banana-cream pie are rich, complex, multidimensional, and impalpable. One of the functions of language is to help us palp them—to help us extract and remember the important features of our experiences so that we can analyze and communicate them later. *The New York Times* online film archive stores critical synopses of films rather than the films themselves, which would take up far too much space, be far too difficult to search, and be thoroughly useless to anyone who wanted to know what a film was like without actually seeing it. Experiences are like movies with several added dimensions, and were our brains to store the full-length feature films of our lives rather than their tidy descriptions, our heads would need to be several times larger. And when we wanted to know or tell others whether the tour of the sculpture garden was worth the price of the ticket, we would have to replay the entire episode to find out. Every act of memory would require precisely the amount of time that the event being remembered had originally taken, which would permanently sideline us the first time someone asked if we liked growing up in Chicago. So we reduce our experiences to words such as *happy*, which barely do them justice but which are the things we can carry reliably and conveniently with us into the future. The smell of the rose is unresurrectable, but if we know it was good and we know it was sweet, then we know to stop and smell the next one.

Perceiving Differences

Our remembrance of things past is imperfect, thus comparing our new happiness with our memory of our old happiness is a risky way to determine whether two subjective experiences are really different. So let's try a slightly modified approach. If we cannot remember the feeling of yesterday's banana-cream pie well enough to compare it with the feeling of today's good deed, perhaps the solution is to compare experiences that are so close together in time that we can actually watch them change. For instance, if we were to do a version of the color-swatch experiment in which we reduced the amount of time that passed between the presentation of the original swatch and the presentation of the lineup, surely people would have no problem identifying the original swatch, right? So what if we reduced the time to, say, twenty-five seconds? Or fifteen? Ten? How about a fraction of one? *And what if, as a bonus, we made the identification task a bit easier by showing volunteers a color swatch for a few seconds, taking it away for just a fraction of a second, and then showing them one test swatch (instead of a lineup of six) and asking them to tell us whether the single test swatch is the same as the original. No intervening verbal description to confuse their memories, no rival test swatches to confuse their eyes, and only a sliver of a slice of a moment between the presentation of the original and test swatches. Gosh. Given how simple we've made the task, shouldn't we predict that everyone will pass it with, urn, flying colors?*

Yes, but only if we enjoy being wrong. In a study conceptually similar to the one we just designed, researchers asked volunteers to look at a computer screen and read some odd-looking text.²² What made the text so odd was that it alternated between uppercase and lowercase, so that it IOoKeD lIkE tHiS. Now, as you may know, when people seem to be staring directly at something, their eyes are actually flickering slightly away from the thing they are staring at three or four times per second, which is why eyeballs look jiggly if you study them up close. The researchers used an eye-tracking device that tells a computer when the volunteer's eyes are fixated on the object on the screen and when they have briefly

jiggled away. Whenever the volunteers' eyeballs jiggled away from the text for a fraction of a second, the computer played a trick on them: It changed the case of every letter in the text they were reading so that the text that IOoKeD lIkE tHiS suddenly LoOkEd LiKe ThIs. Amazingly, volunteers did not notice that the text was alternating between different styles several times each second as they read it. Subsequent research has shown that people fail to notice a wide range of these "visual discontinuities," which is why filmmakers can suddenly change the style of a woman's dress or the color of a man's hair from one cut to the next, or cause an item on a table to disappear entirely, all without ever waking the audience.²³ Interestingly, when people are asked to predict whether they would notice such visual discontinuities, they are quite confident that they would.²⁴

And it isn't just the subtle changes we miss. Even dramatic changes to the appearance of a scene are sometimes overlooked. In an experiment taken straight from the pages of *Candid Camera*, researchers arranged for a researcher to approach pedestrians on a college campus and ask for directions to a particular building.²⁵ While the pedestrian and the researcher conferred over the researcher's map, two construction workers, each holding one end of a large door, rudely cut between them, temporarily obstructing the pedestrian's view of the researcher. As the construction workers passed, the original researcher crouched down behind the door and walked off with the construction workers, while a new researcher, who had been hiding behind the door all along, took his place and picked up the conversation. The original and substitute researchers were of different heights and builds and had noticeably different voices, haircuts, and clothing. You would have no trouble telling them apart if they were standing side by side. So what did the Good Samaritans who had stopped to help a lost tourist make of this switcheroo? Not much. In fact, most of the pedestrians failed to notice—*failed to notice that the person to whom they were talking had suddenly been transformed into an entirely new individual*.

Are we to believe, then, that people cannot tell when their experience of the world has changed right before their eyes? Of course not. If we take this research to its logical extreme we end up as extremists generally do: mired in absurdity and handing out pamphlets. If we could never tell when our experience of the world had changed, how could we know that something was moving, how could we tell whether to stop or go at an intersection, and how could we count beyond one? These experiments tell us that the experiences of our former selves are *sometimes* as opaque to us as the experiences of other people, but more important, they tell us when this is most and least likely to be the case. What was the critical ingredient that allowed each of the foregoing studies to produce the results it did? In each instance, volunteers were not *attending* to their own experience of a particular aspect of a stimulus at the moment of its transition. In the color-swatch study, the swatches were swapped in another room during the thirty-second break; in the reading study, the text was changed when the volunteer's eye had momentarily jiggled away; in the door study, the researchers switched places only when a large piece of wood was obstructing the volunteer's view. We would not expect these studies to show the same results if burnt umber became fluorescent mauve, or if **this** became **t h a t**, or if an accountant from Poughkeepsie became Queen Elizabeth II while the volunteer was looking right at her, or him, or whatever. And indeed, research has shown that when volunteers are paying close attention to a stimulus at the precise moment that it changes, they do notice that change quickly and reliably.²⁶ The point of these studies is not that we are hopelessly inept at detecting changes in our experience of the world but rather that unless our minds are keenly focused on a particular aspect of that experience at the very moment it changes, we will be forced to rely on our memories—forced to compare our current experience to our recollection of our former experience—in order to detect the change.

Magicians have known all this for centuries, of course, and have traditionally used their knowledge to spare the rest of us the undue burden of money. A few pages back you chose a card from a group of six. What I didn't tell you at the time was that I have powers far beyond those of mortal men, and therefore I knew which card you were going to pick before you picked it. To prove it, I have removed your card from the group. Take a look at figure 5 and tell me I'm not amazing. How did I do it? This trick is much

more exciting, of course, when you don't know beforehand that it's a trick and you don't have to wade through several pages of text to hear the punch-line. And it doesn't work at all if you compare the two figures side by side, because you instantly see that none of the cards in figure 4 (including the one you picked') appears in figure 5. Put when there is some possibility that the magician knows your chosen card—either by sleight of hand, shrewd deduction, or telepathy—and when your jiggly eyes are not looking directly at the first group of six as it transforms into the second group of five, the illusion can be quite powerful. Indeed, when the trick first appeared on a website, some of the smartest scientists I know hypothesized that a newfangled technology was allowing the server to guess their card by tracking the speed and acceleration of their keystrokes. I personally removed my hand from the mouse just to make sure that its subtle movements were not being measured. It did not occur to me until the third time through that while I had *seen* the first group of six cards, I had only *remembered* my verbal label for the card I had chosen, and hence had failed to notice that all the other cards had changed as well.²⁷ What's important to note for our purposes is that card tricks like this work for precisely the same reason that people find it difficult to say how happy they were in their previous marriages.

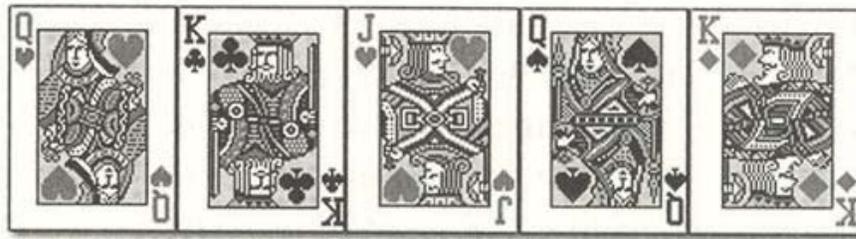


Fig. 5.

Happy Talk

Reba and Lori Schappell claim to be happy, and that disturbs us. We are rock-solid certain that it just *can't* be true, and yet, it looks as though there is no foolproof method for comparing their happiness with our own. If they say they are happy, then on what basis can we conclude that they are wrong? Well, we might try the more lawyerly tactic of questioning their ability to know, evaluate, or describe their own experience. "They may *think* they're happy," we could say, "but that's only because they don't know what happiness really is." In other words, because Lori and Reba have never had many of the experiences that we singletons have had—spinning cartwheels in a meadow, snorkeling along the Great

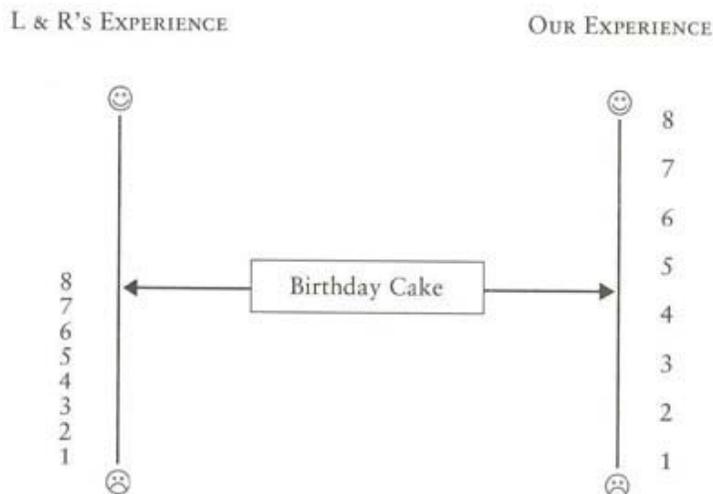


Fig. 6. The *language-squishing hypothesis* suggests that when given a birthday cake, Lori and Reba feel exactly as you feel but talk about it differently.

Barrier Reef, strolling down the avenue without drawing a crowd—we suspect they may have an impoverished background of happy experiences that leads them to evaluate their lives differently than the rest of us would. If, for instance, we were to give the twins a birthday cake, hand them an eight-point rating scale (which can be thought of as an artificial language with eight words for different intensities of happiness), and ask them to report on their subjective experience, they might tell us they felt a joyful *eight*. But isn't it likely that their *eight* and our *eight* represent fundamentally different levels of joy, and that their use of the eight-word language is distorted by their unenviable

situation, which has never allowed them to discover how happy a person can really be? Lori and Reba may be using the eight-word language differently than we do because for them, birthday cake is as good as it gets. They label their happiest experience with the happiest word in the eight-word language, naturally, but this should not cause us to overlook the fact that the experience they call *eight* is an experience that we might call *four and a half*. In short, they don't mean *happy* the way we mean *happy*. Figure 6 shows how an impoverished experiential background can cause language to be squished so that the full range of verbal labels is used to describe a restricted range of experiences. By this account, when the twins say they are ecstatic, they are actually *feeling* what we feel when we say we are pleased.

Squishing Language

The nice things about this *language-squishing hypothesis* are (a) it suggests that everyone everywhere has the same subjective experience when they receive a birthday cake even if they describe that experience differently, which makes the world a rather simple place to live and bake; and (b) it allows us to go on believing that despite what they say about themselves, Lori and Reba aren't *really* happy after all, and thus we are perfectly justified in preferring our lives to theirs. The less nice things about this hypothesis are numerous, and if we worry that Lori and Reba use the eight-word language differently than we do because they have never enjoyed the thrill of a cartwheel, then we had better worry about a few other matters too. For instance, we had better worry that we have never felt the overwhelming sense of peace and security that comes from knowing that a beloved sibling is always by our side, that we will never lose her friendship no matter what kind of crummy stuff we may say or do on a bad day, that there will always be someone who knows us as well as we know ourselves, shares our hopes, worries our worries, and so on. If they haven't had our experiences, then we haven't had theirs either, and it is entirely possible that *we* are the ones with the squished language—that when we say we feel overjoyed, we have no idea what we are talking about because we have never experienced the companionate love, the blissful union, the unadulterated agape that Lori and Reba have. And all of us—you, me, Lori, Reba—had better worry that there are experiences far better than those we have had so far—the experience of flying without a plane, of seeing our children win Academy Awards and Pulitzer Prizes, of meeting God and learning the secret handshake—and that everyone's use of the eight-word language is defective and that no one knows what happiness really is. By that reasoning, we should all follow Solon's advice and never say we are happy until we are dead because otherwise, if the real thing ever does come along, we will have used up the word and won't have any way to tell the newspapers about it.

But these are just the preliminary worries. There are more. If we wanted to do a thought experiment whose results would demonstrate once and for all that Lori and Reba just don't know what happiness really is, perhaps we should imagine that with a wave of a magic wand we could split them apart and allow them to experience life as singletons. If after a few weeks on their own they came to us, repudiated their former claims, and begged not to be changed back to their former state, shouldn't that convince us, as it has apparently convinced them, that they were previously confusing their fours and eights? We've all known someone who had a religious conversion, went through a divorce, or survived a heart attack and now claims that her eyes are open for the very first time—that despite what she thought and said in her previous incarnation, she was never really happy until now. Are the people who have undergone such marvelous metamorphoses to be taken at their word?

Not necessarily. Consider a study in which volunteers were shown some quiz-show questions and asked to estimate the likelihood that they could answer them correctly. Some volunteers were shown only the questions (the question-only group), while others were shown both the questions and the answers (the question-and-answer group). Volunteers in the question-only group thought the questions were quite difficult, while those in the question-and-answer group—who saw both the questions (“What did Philo T. Farnsworth invent?”) and the answers (“The television set”)—believed that they could have answered the questions easily had they never seen the answers at all. Apparently, once volunteers knew the answers, the questions seemed simple (“Of course it was the television—everyone knows that!”), and the volunteers were no longer able to judge how difficult the questions would seem to someone who did not share their knowledge of the answers.²⁸

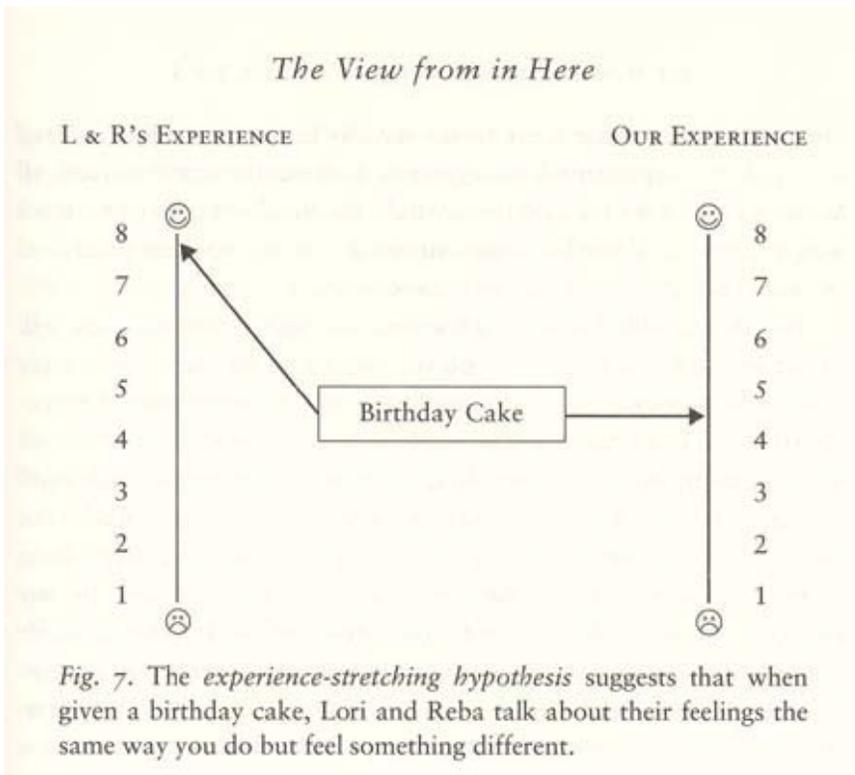
Studies such as these demonstrate that once we have an experience, we cannot simply set it aside and see the world as we would have seen it had the experience never happened. To the judge's dismay, the jury cannot disregard the prosecutor's snide remarks. Our experiences instantly become part of the lens through which we view our entire past, present, and future, and like any lens, they shape and distort what we see. This lens is not like a pair of spectacles that we can set on the nightstand when we find it convenient to do so but like a pair of contacts that are forever affixed to our eyeballs with superglue. Once we learn to read, we can never again see letters as mere inky squiggles. Once we learn about free jazz, we can never again hear Ornette Coleman's saxophone as a source of noise. Once we learn that van Gogh was a mental patient, or that Ezra Pound was an anti-Semite, we can never again view their art in the same way. If Lori and Reba were separated for a few weeks, and if they told us that they were happier now than they used to be, they might be right. But they might not. They might just be telling us that the singletons they had become now viewed being conjoined with as much distress as those of us who have always been singletons do. Even if they could remember what they thought, said, and did as conjoined twins, we would expect their more recent experience as singletons to color their evaluation of the conjoined experience, leaving them unable to say with certainty how conjoined twins who had never been singletons actually feel. In a sense, the experience of separation would make them us, and thus they would be in the same difficult position that we are in when we try to imagine the experience of being conjoined. Becoming singletons would affect their views of the past in ways that they could not simply set aside. All of this means that when people have new experiences that lead them to claim that their language was squished—that they were not really happy even though they said so and thought so at the time—they can be mistaken. In other words, people can be wrong in the present when they say they were wrong in the past.

Stretching Experience

Lori and Reba have not done many of the things that for the rest of us give rise to feelings near the top of the happiness scale—cartwheels, scuba diving, name your poison—and surely this must make a difference. If impoverished experiential backgrounds don't necessarily squish language, then what do they do instead? Let's assume that Lori and Reba really do have an impoverished experiential background against which to evaluate something as simple as, say, the dutiful presentation of a chocolate cake on their birthday. One possibility is that their impoverished experiential background would squish their language. But another possibility is that their impoverished experiential background would not squish their language so much as it would stretch their experience—that is, when they say eight they mean exactly the same thing we mean when we say eight because when they receive a birthday cake they feel exactly the same way that the rest of us feel when we do underwater cartwheels along the Great Barrier Reef. Figure 7 illustrates the *experience-stretching hypothesis*.

Experience stretching is a bizarre phrase but not a bizarre idea. We often say of others who claim to be happy despite circumstances that we believe should preclude it that “they only think they're happy because they don't know what they're missing.” Okay, sure, *but that's the point*. Not knowing what we're missing can mean that we are truly happy under circumstances that would not allow us to be happy once we have experienced the missing thing. It *does not* mean that those who don't know what they're missing are *less* happy than those who have it. Examples abound in my life and yours, so let's talk about mine. I occasionally smoke a cigar because it makes me happy, and my wife occasionally fails to understand why I must have a cigar to be happy when she can apparently be just as happy without one (and even happier without me having one). But the experience-stretching hypothesis suggests that I too could have been happy without cigars if only I had not experienced their pharmacological mysteries in my wayward youth. But I did, and because I did I now know what I am missing when I don't, hence that glorious moment during my spring vacation when I am reclining in a lawn chair on the golden sands of Kauai, sipping Talisker and watching the sun slip slowly into a taffeta sea, is just not quite perfect if I don't also have something stinky and Cuban in my mouth. I could press both my luck and my marriage by advancing the language-squishing hypothesis, carefully explaining to

my wife that because she has never experienced the pungent earthiness of a Montecristo no. 4, she has an impoverished experiential background and therefore does not know what happiness really is. I would lose, of course, because I always do, but in this case I would deserve it.



Doesn't it make better sense to say that by learning to enjoy cigars I changed my experiential background and inadvertently ruined all future experiences that do not include them? The Hawaiian sunset was an eight until the Hawaiian sunset à la stogie took its place and reduced the cigarless sunset to a mere seven.²⁹

But we've talked enough about me and my vacation. Let's talk about me and my guitar. I've played the guitar for years, and I get very little pleasure from executing an endless repetition of three-chord blues. But when I first learned to play as a teenager, I would sit upstairs in my bedroom happily strumming those three chords until my parents banged on the ceiling and invoked their rights

under the Geneva Convention. I suppose we could try the language-squishing hypothesis here and say that my eyes have been opened by my improved musical abilities and that I now realize I was not *really* happy in those teenage days. But doesn't it seem more reasonable to invoke the experience-stretching hypothesis and say that an experience that once brought me pleasure no longer does? A man who is given a drink of water after being lost in the Mojave Desert for a week may at that moment rate his happiness as eight. A year later, the same drink might induce him to feel no better than two. Are we to believe that he was wrong about how happy he was when he took that life-giving sip from a rusty canteen, or is it more reasonable to say that a sip of water can be a source of ecstasy or a source of moisture depending on one's experiential background? If impoverished experiential backgrounds squish our language rather than stretch our experience, then children who say they are delighted by peanut butter and jelly are just plain wrong, and they will admit it later in life when they get their first bite of goose liver, at which time they will be right, until they get older and begin to get heartburn from fatty foods, at which time they will realize that they were wrong then too. Every day would be a repudiation of the day before, as we experienced greater and greater happiness and realized how thoroughly deluded we were until, conveniently enough, now.

So which hypothesis is correct? We can't say. What we *can* say is that all claims of happiness are claims from someone's *point of view*—from the perspective of a single human being whose unique collection of past experiences serves as a context, a lens, a background for her evaluation of her current experience. As much as the scientist might wish for it, there isn't a view from nowhere. Once we have an experience, we are thereafter unable to see the world as we did before. Our innocence is lost and we cannot go home again. We may remember what we thought or said (though not necessarily), and we may remember what we did (though not necessarily that either), but the likelihood is depressingly slim that we can resurrect our experience and then evaluate it as we would have back then. In some ways, the

cigar-smoking, guitar-playing, pâté-eating people we become have no more authority to speak on behalf of the people we used to be than do outside observers. The separated twins may be able to tell us how they *now* feel about having been conjoined, but they cannot tell us how conjoined twins who have never experienced separation feel about it. No one knows if Reba's and Lori's eight feels like our eight, and that includes all the Rebas and Loris that will ever be.

Onward

On the morning of May 15, 1916, the arctic explorer Ernest Shackleton began the last leg of one of history's most grueling adventures. His ship, the *Endurance*, had sunk in the Weddell Sea, stranding him and his crew on Elephant Island. After seven months, Shackleton and five of his crewmen boarded a small lifeboat in which they spent three weeks crossing eight hundred miles of frigid, raging ocean. Upon reaching South Georgia Island, the starving, frostbitten men prepared to disembark and cross the island on foot in the hope of reaching a whaling station on the other side. No one had ever survived that trek. Facing almost certain death that morning, Shackleton wrote:

We passed through the narrow mouth of the cove with the ugly rocks and waving kelp close on either side, turned to the east, and sailed merrily up the bay as the sun broke through the mists and made the tossing waters sparkle around us. We were a curious-looking party on that bright morning, but we were feeling happy. We even broke into song, and, but for our Robinson Crusoe appearance, a casual observer might have taken us for a picnic party sailing in a Norwegian fjord or one of the beautiful sounds of the west coast of New Zealand.³⁰

Could Shackleton really have meant what he said? Could his *happy* be our *happy*, and is there any way to tell? As we've seen, happiness is a subjective experience that is difficult to describe to ourselves and to others, thus evaluating people's claims about their own happiness is an exceptionally thorny business. But don't worry—because before business gets better, it gets a whole lot thornier.

Chapter 3

Outside Looking In

Go to your bosom;
knock there, and ask your heart what it doth know.
--Shakespeare, *Measure for Measure*

There aren't many jokes about psychology professors, so we tend to cherish the few we have. Here's one. What do psychology professors say when they pass each other in the hallway? "Hi, you're fine, how am I?" I know, I know. The joke isn't that funny. But the reason it's *supposed* to be funny is that people shouldn't know how others are feeling but they should know how they're feeling themselves. "How are you?" is overly familiar for the same reason that "How am I?" is overly strange. And yet, strange as it is, there are times when people seem not to know their own hearts. When conjoined twins claim to be happy, we have to wonder if perhaps they just *think* they're happy. That is, they may believe what they're saying, but what they're saying may be wrong. Before we can decide whether to accept people's claims about their happiness, we must first decide whether people can, in principle, be mistaken about what they feel. We can be wrong about all sorts of things—the price of soybeans, the life span of dust mites, the history of flannel— but can we be wrong about our own emotional experience? Can we believe we are feeling something we aren't? Are there really folks out there who can't accurately answer the world's most familiar question?

Yes, and you'll find one in the mirror. Read on.

Dazed and Confused

But not just yet. Before you read on, I challenge you to stop and have a nice long look at your thumb. Now, I will wager that you did not accept my challenge. I will wager that you went right on reading because looking at your thumb is so easy that it makes for rather pointless sport—everyone bats a thousand and the game is called on account of boredom. But if looking at your thumb seems beneath you, just consider what actually has to happen for us to see an object in our environment—a thumb, a glazed doughnut, or a rabid wolverine. In the tiny gap between the time that the light reflected from the surface of the object reaches our eyes and the time that we become aware of the object's identity, our brains must extract and analyze the object's features and compare them with information in our memory to determine what the thing is and what we ought to do about it. This is complicated stuff—so complicated that no scientist yet understands precisely how it happens and no computer can simulate the trick—but it is just the sort of complicated stuff that brains do with exceptional speed and accuracy. In fact, they perform these analyses with such proficiency that we have the experience of simply looking leftward, seeing a wolverine, feeling afraid, and preparing to do all further analysis from the safety of a sycamore.

Think for a moment about how looking *ought* to happen. If you were designing a brain from scratch, you would probably design it so that it first identified objects in its environment ("Sharp teeth, brown fur, weird little snorting sound, hot drool—why, that's a rabid wolverine!") and *then* figured out what to do ("Leaving seems like a splendid idea about now"). But human brains were not designed from scratch. Rather, their most critical functions were designed first, and their less critical functions were added on like bells and whistles as the millennia passed, which is why the really important parts of your brain (e.g., the ones that control your breathing) are down at the bottom and the parts you could probably live without (e.g., the ones that control your temper) sit atop them, like ice cream on a cone. As it turns out, running with great haste from rabid wolverines is much more important than knowing what they are. Indeed, actions such as running away are so vitally important to the survival of terrestrial mammals like the ones from whom we are descended that evolution took no chances and designed the brain to answer the "What should I do?" question *before* the "What is it?" question.¹ Experiments have demonstrated that the moment we encounter an object, our brains instantly analyze just a few of its key features and then use the presence or absence of these features to make one very fast and very simple decision: "Is

this object an important thing to which I ought to respond right now?"² Rabid wolverines, crying babies, hurled rocks, beckoning mates, cowering prey—these things count for a lot in the game of survival, which requires that we take immediate action when we happen upon them and do not dally to contemplate the finer points of their identities. As such, our brains are designed to decide *first* whether objects count and to decide later what those objects are. This means that when you turn your head to the left, there is a fraction of a second during which your brain does *not* know that it is seeing a wolverine but *does* know that it is seeing something scary.

But how can that be? How can we know something is scary if we don't know what it is? To understand how this can happen, just consider how you would go about identifying a person who is walking toward you across a vast expanse of desert. The first thing to catch your eye would be a small flicker of motion on the horizon. As you stared, you would soon notice that the motion was that of an object moving toward you. As it came closer, you would see that the motion was biological, then you would see that the biological object was a biped, then a human, then a female, then a fat human female with dark hair and a Budweiser T-shirt, and then—hey, what's Aunt Mabel doing in the Sahara? Your identification of Aunt Mabel would *progress*—that is, it would begin quite generally and become more specific over time, until finally it terminated in a family reunion. Similarly, the identification of a wolverine at your elbow progresses over time—albeit just a few milliseconds—and it too progresses from the general to the specific. Research demonstrates that there is enough information in the very early, very general stages of this identification process to decide whether an object is scary, but not enough information to know what the object is. Once our brains decide that they are in the presence of something scary, they instruct our glands to produce hormones that create a state of heightened physiological arousal—blood pressure rises, heart rate increases, pupils contract, muscles tense—which prepares us to spring into action. Before our brains have finished the full-scale analysis that will allow us to know that the object is a wolverine, they have already put our bodies into their ready-to-run-away modes—all pumped up and raring to go.

The fact that we can feel aroused without knowing exactly what it is that has aroused us has important implications for our ability to identify our own emotions.³ For example, researchers studied the reactions of some young men who were crossing a long, narrow, suspension bridge constructed of wooden boards and wire cables that rocked and swayed 230 feet above the Capilano River in North Vancouver.⁴ A young woman approached each man and asked if he would mind completing a survey, and after he did so, the woman gave the man her telephone number and offered to explain her survey project in greater detail if he called. Now, here's the catch: The woman approached some of these young men as they were crossing the bridge and others only after they had crossed it. As it turned out, the men who had met the woman as they were crossing the bridge were much more likely to call her in the coming days. Why? The men who met the woman in the middle of a shaky, swaying suspension bridge were experiencing intense physiological arousal, which they would normally have identified as fear. But because they were being interviewed by an attractive woman, they mistakenly identified their arousal as sexual attraction. Apparently, feelings that one interprets as fear in the presence of a sheer drop may be interpreted as lust in the presence of a sheer blouse—which is simply to say that people *can* be wrong about what they are feeling.⁵

Comfortably Numb

The novelist Graham Greene wrote: "Hatred seems to operate the same glands as love."⁶ Indeed, research shows that physiological arousal can be interpreted in a variety of ways, and our interpretation of our arousal depends on what we believe caused it. It is possible to mistake fear for lust, apprehension for guilt,⁷ shame for anxiety.⁸ But just because we don't always know what to *call* our emotional experience doesn't mean that we don't know what that experience is *like*, does it? Perhaps we can't say its name and perhaps we don't know what made it happen, but we always know what it feels like, right? Is it possible to believe we are feeling *something* when we are actually feeling *nothing at all*? The philosopher Daniel Dennett put the question this way:

Suppose someone is given the post-hypnotic suggestion that upon awakening he will *have* a pain in his wrist. If the hypnosis works, is it a case of pain, hypnotically induced, or merely a case of a person who has been induced to *believe* he has a pain? If one answers that the hypnosis has induced real pain, suppose the post-hypnotic suggestion had been: “On awakening you will *believe* you have a pain in the wrist.” If this suggestion works, is the circumstance just like the previous one? Isn’t believing you are in pain tantamount to being in pain?⁹

At first blush, the idea that we can mistakenly believe we are feeling pain seems preposterous, if only because the distinction between *feeling pain* and *believing one is feeling pain* looks so suspiciously like an artifact of language. But give this idea a second blush while considering the following scenario. You are sitting at a sidewalk café, sipping a tangy espresso and contentedly browsing the Sunday newspaper. People are strolling by and taking in the fine morning, and the amorous activities of a young couple at a nearby table attest to the eternal wonder of spring. The song of a scarlet tanager punctuates the yeasty scent of new croissants that wafts from the bakery. The article you are reading on campaign-finance reform is quite interesting and all is well—until suddenly you realize you are now reading the third paragraph, that somewhere in the middle of the first you started sniffing baked goods and listening to bird chirps, and that you now have absolutely no idea what the story you are reading is about. Did you actually read that second paragraph, or did you merely dream it? You take a quick look back and, sure enough, all the words are familiar. As you read them again you can even recall hearing them spoken a few moments ago by that narrator in your head who sounds astonishingly like you and whose voice was submerged for a paragraph or two beneath the sweet distractions of the season.

Two questions confront us. First, did you experience the paragraph the first time you read it? Second, if so, did you know you were experiencing it? The answers are yes and no, respectively. You experienced the paragraph and that’s why it was so familiar to you when you went back through it. Had there been an eye tracker at your table, it would have revealed that you did not stop reading at any point. In fact, you were smack-dab in the middle of reading’s smooth movements when suddenly you caught yourself...caught yourself...caught yourself *what?* Experiencing without being aware that you were experiencing—that’s what. Now, let me slow down for a moment and tread carefully around these words lest you start listening for the high-pitched tones of the indigo bunting. The word *experience* comes from the Latin *experientia*, meaning “to try,” whereas the word *aware* comes from the Greek *horan*, meaning “to see.” Experience implies participation in an event, whereas awareness implies observation of an event. The two words can normally be substituted in ordinary conversation without much damage, but they are differently inflected. One gives us the sense of being engaged, whereas the other gives us the sense of being cognizant of that engagement. One denotes reflection while the other denotes the thing being reflected. In fact, awareness can be thought of as a kind of experience of our own experience.¹⁰ When two people argue about whether their dogs are conscious, one is usually using that badly bruised term to mean “capable of experience” while the other is using it to mean “capable of awareness.” Dogs are not rocks, one argues, so of course they are conscious. Dogs are not people, the other replies, so of course they are not conscious. Both arguers are probably right. Dogs probably do have an experience of yellow and sweet: There is something it is like to be a dog standing before a sweet, yellow thing, even if human beings can never know what that something is. But the experiencing dog is probably not simultaneously aware that it is having that experience, thinking as it chews, “Damned fine ladyfinger.”

The distinction between experience and awareness is elusive because most of the time they hang together so nicely. We pop a ladyfinger into our mouths, we experience sweetness, we know we are experiencing sweetness, and nothing about any of this seems even remotely challenging. But if the typically tight bond between experience and awareness leads us to suspect that the distinction between them is an exercise in hand waving, you need only rewind the tape a bit and imagine yourself back at the café at precisely the moment that your eyes were running across the newsprint and your mind was about to mosey off to contemplate the sounds and smells around you. Now hit *play* and imagine that your mind wanders away, gets lost, and never comes back. That’s right. Imagine that as you experience the

newspaper article, your awareness becomes permanently unbound from your experience, and you never catch yourself drifting away—never return to the moment with a start to discover that you are reading. The young couple at the nearby table stop pawing each other long enough to lean over and ask you for the latest news on the campaign-finance reform bill, and you patiently explain that you could not possibly know that because, as they would surely see if only they would pay attention to something other than their glands, you are happily listening to the sounds of spring and *not reading a newspaper*. The young couple is perplexed by this response, because as far as they can see, you do indeed have a newspaper in your hands and your eyeballs are, in fact, running rapidly across the page even as you deny it. After a bit of whispering and one more smooch, they decide to run a test to determine whether you are telling the truth. “Sorry to bother you again, but we are desperate to know how many senators voted for the campaign-finance reform bill last week and wonder if you would be good enough to hazard a guess?” Because you are sniffing croissants, listening to bird calls, and *not reading a newspaper*, you have no idea how many senators voted for the bill. But it appears that the only way to get these strange people to mind their own business is to tell them *something*, so you pull a number out of thin air. “How about forty-one?” you offer. And to no one’s astonishment but your own, the number is exactly right.

This scenario may seem too bizarre to be real (after all, how likely is it that forty-one senators would actually vote for campaign-finance reform?), but it is both. Our visual experience and our awareness of that experience are generated by different parts of our brains, and as such, certain kinds of brain damage (specifically, lesions to the primary visual cortical receiving area known as V1) can impair one without impairing the other, causing experience and awareness to lose their normally tight grip on each other. For example, people who suffer from the condition known as *blindsight* have no awareness of seeing, and will truthfully tell you that they are completely blind.¹¹ Brain scans lend credence to their claims by revealing diminished activity in the areas normally associated with awareness of visual experience. On the other hand, the same scans reveal relatively normal activity in the areas associated with vision.¹² So if we flash a light on a particular spot on the wall and ask the blindsighted person if she saw the light we just flashed, she tells us, “No, of course not. As you might infer from the presence of the guide dog, I’m blind.” But if we ask her to make a guess about where the light might have appeared—just *take a stab* at it, *say anything, point randomly if you like*—she “guesses” correctly far more often than we would expect by chance. She is *seeing*, if by *seeing* we mean experiencing the light and acquiring knowledge about its location, but she is *blind*, if by *blind* we mean that she is not aware of having seen. Her eyes are projecting the movie of reality on the little theater screen in her head, but the audience is in the lobby getting popcorn.

This dissociation between awareness and experience can cause the same sort of spookiness with regard to our emotions. Some people seem to be keenly aware of their moods and feelings, and may even have a novelist’s gift for describing their every shade and flavor. Others of us come equipped with a somewhat more basic emotional vocabulary that, much to the chagrin of our romantic partners, consists primarily of *good*, *not so good*, and *I already told you*. If our expressive deficit is so profound and protracted that it even occurs outside of football season, we may be diagnosed with *alexithymia*, which literally means “absence of words to describe emotional states.” When alexithymics are asked what they are feeling, they usually say, “Nothing,” and when they are asked how they are feeling, they usually say, “I don’t know.” Alas, theirs is not a malady that can be cured by a pocket thesaurus or a short course in word power, because alexithymics do not lack the traditional affective lexicon so much as they lack introspective awareness of their emotional states. They seem to *have* feelings, they just don’t seem to know about them. For instance, when researchers show volunteers emotionally evocative pictures of amputations and car wrecks, the physiological responses of alexithymics are indistinguishable from those of normal people. But when they are asked to make verbal ratings of the unpleasantness of those pictures, alexithymics are decidedly less capable than normal people of distinguishing them from pictures of rainbows and puppies.¹³ Some evidence suggests that alexithymia is caused by a dysfunction of the anterior cingulate cortex, which is a part of the brain known to mediate our awareness of many

things, including our inner states.¹⁴ Just as the decoupling of awareness and visual experience can give rise to blindsight, so the decoupling of awareness and emotional experience can give rise to what we might call *numbfeel*. Apparently, it is possible—at least for some of the people some of the time—to be happy, sad, bored, or curious, and not know it.

Warm the Happyometer

Once upon a time there was a bearded God who made a small, flat earth, and pasted it in the very middle of the sky so that human beings would be at the center of everything. Then physics came along and complicated the picture with big bangs, quarks, branes, and superstrings, and the payoff for all that critical analysis is that now, several hundred years later, most people have no idea where they are. Psychology has also created problems where once there were none by exposing the flaws in our intuitive understandings of ourselves. Maybe the universe has several small dimensions tucked inside the large ones, maybe time will eventually stand still or flow backward, and maybe folks like us were never meant to fathom a bit of it. But one thing we can always count on is our own experience. The philosopher and mathematician René Descartes concluded that our experience is the *only* thing about which we may be completely sure and that everything else we think we know is merely an inference from that. And yet, we have seen that when we say with moderate precision what we mean by words such as *happiness*, we still can't be sure that two people who claim to be happy are having the same experience, or that our current experience of happiness is really different from our past experience of happiness, or that we are *having* an experience of happiness at all. If the goal of science is to make us feel awkward and ignorant in the presence of things we once understood perfectly well, then psychology has succeeded above all others.

But like happiness, *science* is one of those words that means too many things to too many people and is thus often at risk of meaning nothing at all. My father is an eminent biologist who, after pondering the matter for some decades, recently revealed to me that psychology can't really be a science because science requires the use of electricity. Apparently shocks to your ankles don't count. My own definition of science is a bit more eclectic, but one thing about which I, my dad, and most other scientists can agree is that if a thing cannot be measured, then it cannot be studied scientifically. It can be studied, and one might even argue that the study of such unquantifiables is more worthwhile than all the sciences laid end to end. But it is not science because science is about measurement, and if a thing cannot be measured—cannot be compared with a clock or a ruler or something other than itself—it is not a potential object of scientific inquiry. As we have seen, it is extremely difficult to measure an individual's happiness and feel completely confident in the validity and reliability of that measurement. People may not know how they feel, or remember how they felt, and even if they do, scientists can never know exactly how their experience maps onto their description of that experience, and hence they cannot know precisely how to interpret people's claims. All of this suggests that the scientific study of subjective experience is bound to be tough going.

Tough, yes, but not impossible, because the chasm between experiences can be bridged—not with steel girders or a six-lane toll road, mind you, but with a length of reasonably sturdy rope—if we accept three premises.

Measuring Right

The first premise is something that any carpenter could tell you: Imperfect tools are a real pain, but they sure beat pounding nails with your teeth. The nature of subjective experience suggests there will never be a *happyometer*—a perfectly reliable instrument that allows an observer to measure with complete accuracy the characteristics of another person's subjective experience so that the measurement can be taken, recorded, and compared with another.¹⁵ If we demand that level of perfection from our tools, then we better pack up the eye trackers, brain scanners, and color swatches and cede the study of subjective experience to the poets, who did a nice job with it for the first few thousand years. But if we do that, then it is only fair that we hand them the study of almost everything else as well. Chronometers,

thermometers, barometers, spectrometers, and every other device that scientists use to measure the objects of their interest are imperfect. Every one of them introduces some degree of error into the observations it allows, which is why governments and universities pay obscene sums of money each year for the slightly more perfect version of each. And if we are purging ourselves of all things that afford us only imperfect approximations of the truth, then we need to discard not only psychology and the physical sciences but law, economics, and history as well. In short, if we adhere to the standard of perfection in all our endeavors, we are left with nothing but mathematics and the White Album. So maybe we just need to accept a bit of fuzziness and stop complaining.

The second premise is that of all the flawed measures of subjective experience that we can take, the honest, real-time report of the attentive individual is the least flawed.¹⁶ There are many other ways to measure happiness, of course, and some of them *appear* to be much more rigorous, scientific, and objective than a person's own claims. For example, electromyography allows us to measure the electrical signals produced by the striated muscles of the face, such as the *corrugator supercillia*, which furrows our brows when we experience something unpleasant, or the *zygomaticus major*, which pulls our mouths up toward our ears when we smile. Physiography allows us to measure the electrodermal, respiratory, and cardiac activity of the autonomic nervous system, all of which change when we experience strong emotions. Electroencephalography, positron-emission tomography, and magnetic resonance imaging allow us to measure electrical activity and blood flow in different regions of the brain, such as the left and right prefrontal cortex, which tend to be active when we are experiencing positive and negative emotions, respectively. Even a clock can be a useful device for measuring happiness, because startled people tend to blink more slowly when they are feeling happy than when they are feeling fearful or anxious.¹⁷

Scientists who rely on the honest, real-time reports of attentive individuals often feel the need to defend that choice by reminding us that these reports correlate strongly with other measures of happiness. But in a sense, they've got it backward. After all, the only reason why we take any of these bodily events—from muscle movement to cerebral blood flow—as indices of happiness is that *people tell us they are*. If everyone claimed to feel raging anger or thick, black depression when their zygomatic muscle contracted, their eyeblink slowed, and the left anterior brain region filled with blood, then we would have to revise our interpretations of these physiological changes and take them as indices of unhappiness instead. If we want to know how a person feels, we must begin by acknowledging the fact that there is one and only one observer stationed at the critical point of view. She may not always remember what she felt before, and she may not always be aware of what she is feeling right now. We may be puzzled by her reports, skeptical of her memory, and worried about her ability to use language as we do. But when all our hand wringing is over, we must admit that she is the *only* person who has even the *slightest* chance of describing “the view from in here,” which is why her claims serve as the gold standard against which all other measures are measured. We will have greater confidence in her claims when they jibe with what other, less privileged observers tell us, when we feel confident that she evaluates her experience against the same background that we do, when her body does what most other bodies do when they experience what she is claiming to experience, and so on. But even when all of these various indices of happiness dovetail nicely, we cannot be perfectly sure that we know the truth about her inner world. We can, however, be sure that we have come as close as observers ever get, and that *has* to be good enough.

Measuring Often

The third premise is that imperfections in measurement are always a problem, but they are a devastating problem only when we don't recognize them. If we have a deep scratch on our eyeglasses and don't know it, we may erroneously conclude that a small crack has opened in the fabric of space and is following us wherever we go. But if we are cognizant of the scratch, we can do our best to factor it out of our observations, reminding ourselves that what looks like a rip in space is really just a flaw in the device we are using to observe it. What can scientists do to “see through” the flaws inherent in reports of

subjective experiences? The answer lies in a phenomenon that statisticians call the *law of large numbers*.

Many of us have a mistaken idea about large numbers, namely, that they are like small numbers, only bigger. As such, we expect them to do *more* of what small numbers do but not to do anything *different*. So, for instance, we know that two neurons swapping electrochemical signals across their axons and dendrites cannot possibly be conscious. Nerve cells are simple devices, less complex than walkie-talkies from Sears, and they do one simple thing, namely, react to the chemicals that reach them by releasing chemicals of their own. If we blithely go on to assume that ten billion of these simple devices can only do ten billion simple things, we would never guess that billions of them can exhibit a property that two, ten, or ten thousand cannot. Consciousness is precisely this sort of *emergent property*—a phenomenon that arises in part as a result of the sheer *number* of interconnections among neurons in the human brain and that does not exist in any of the parts or in the interconnection of just a few.¹⁸ Quantum physics offers a similar lesson. We know that subatomic particles have the strange and charming ability to exist in two places at once, and if we assume that anything composed of these particles must behave likewise, we should expect all cows to be in all possible barns at the same time. Which they obviously are not, because fixedness is another one of those properties that emerges from the interaction of a terribly large number of terribly tiny parts that do not themselves have it. In short, more is not just more—it is sometimes *other*—than less.

The magic of large numbers works along with the laws of probability to remedy many of the problems associated with the imperfect measurement of subjective experience. You know that if a fair coin is flipped on several occasions it should come up heads about half the time. As such, if you have nothing better to do on a Tuesday evening, I invite you to meet me at the Grafton Street Pub in Harvard Square and play an endearingly mindless game called Splitting the Tab with Dan. Here's how it works. We flip a coin, I call heads, you call tails, and the loser pays the good barkeep, Paul, for our beers each time. Now, if we flipped the coin four times and I won on three of them, you would undoubtedly chalk it up to bad luck on your part and challenge me to darts. But if we flipped the coin four million times and I won on three million of them, then you and your associates would probably send out for a large order of tar and feathers. Why? Because even if you don't know the first thing about probability theory, you have a very keen intuition that when numbers are small, little imperfections—like a stray gust of wind, or a dab of perspiration on a finger—can influence the outcome of a coin flip. But when numbers are large, such imperfections stop mattering. There may have been a dollop of sweat on the coin on a few of the flips, and there may have been a wayward puff of air on a few others, and these imperfections might well account for the fact that the coin came up heads once more than expected when we flipped it four times. But what are the odds that these imperfections could have caused the coin to come up heads a million more times than expected? Infinitesimal, your intuition tells you, and your intuition is spot on. The odds are as close to infinitesimal as things on earth get without disappearing altogether.

This same logic can be applied to the problem of subjective experience. Suppose we were to give a pair of volunteers a pair of experiences that were meant to induce happiness—say, by giving a million dollars to one of them and the gift of a small-caliber revolver to the other. We then ask each volunteer to tell us how happy he or she is. The nouveau riche volunteer says she is ecstatic, and the armed volunteer says he is mildly pleased (though perhaps not quite as pleased as one ought to make an armed volunteer). Is it possible that the two are actually having the same subjective emotional experiences but describing them differently? Yes. The new millionaire may be demonstrating politeness rather than joy. Or perhaps the new pistol owner is experiencing ecstasy but, because he recently shook the hand of God near the Great Barrier Reef, is describing his ecstasy as mere satisfaction. These problems are real problems, significant problems, and we would be foolish to conclude on the basis of these two reports that happiness is not, as it were, a warm gun. But if we gave away a *million pistols* and a *million envelopes of money*, and if 90 percent of the people who got new money claimed to be happier than 90 percent of the people who got new weapons, the odds that we are being deceived by the idiosyncrasies of verbal descriptions become very small indeed. Similarly, if a person tells us that she is happier with

today's banana-cream pie than with yesterday's coconut-cream pie, we may rightfully worry that she is misremembering her prior experience. But if this were to happen over and over again with hundreds or thousands of people, some of whom tasted the coconut-cream pie before the banana-cream pie and some of whom tasted it after, we would have good reason to suspect that different pies really do give rise to different experiences, one of which is more pleasant than the other. After all, what are the odds that *everyone* misremembers banana-cream pie as better and coconut-cream pie as worse than they really were?

The fundamental problem in the science of experience is that if either the language-squishing hypothesis or the experience-stretching hypothesis is correct, then every one of us may have a different mapping of what we experience onto what we say—and because subjective experiences can be shared only by saying, the true nature of those experiences can never be perfectly measured. In other words, if the experience and description scales are calibrated a bit differently for every person who uses them, then *it is impossible for scientists to compare the claims of two people*. That's a problem. But the problem isn't with the word *compare*, it's with the word *two*. Two is too small a number, and when it becomes two hundred or two thousand, the different calibrations of different individuals begin to cancel one another out. If the workers at the factory that makes all the world's tape measures, rulers, and yardsticks got sloshed at a holiday party and started turning out millions of slightly different-sized measuring instruments, we would not feel confident that a dinosaur was larger than a turnip if you measured one and I measured the other. After all, we may have used pickled rulers. But if hundreds of people with hundreds of rulers stepped up to one of these objects and took its measurements, we could average those measurements and feel reasonably confident that a tyrannosaurus is indeed bigger than a root vegetable. After all, what are the odds that all the people who measured the dinosaur just so happened to have used stretched rulers, and that all the people who measured the turnip just so happened to have used squished rulers? Yes, it is *possible*, and the odds can be calculated quite precisely, but I will spare you the math and promise you that they are so slender that writing them down would endanger the world's supply of zeroes.

The bottom line is this: The attentive person's honest, real-time report is an imperfect approximation of her subjective experience, but it is the only game in town. When a fruit salad, a lover, or a jazz trio is just too imperfect for our tastes, we stop eating, kissing, and listening. But the law of large numbers suggests that when a measurement is too imperfect for our tastes, we should not stop measuring. Quite the opposite—we should measure again and again until niggling imperfections yield to the onslaught of data. Those subatomic particles that like to be everywhere at once seem to cancel out one another's behavior so that the large conglomeration of particles that we call cows, cars, and French Canadians stay exactly where we put them. By the same logic, the careful collection of a large number of experiential reports allows the imperfections of one to cancel out the imperfections of another. No individual's report may be taken as an unimpeachable and perfectly calibrated index of his experience—not yours, not mine—but we can be confident that if we ask enough people the same question, the average answer will be a roughly accurate index of the average experience. The science of happiness requires that we play the odds, and thus the information it provides us is always at some risk of being wrong. But if you want to bet against it, then flip that coin one more time, get out your wallet, and tell Paul to make mine a Guinness.

Onward

One of the most annoying songs in the often annoying history of popular music begins with this line: "Feelings, nothing more than feelings." I wince when I hear it because it always strikes me as roughly equivalent to starting a hymn with "Jesus, nothing more than Jesus." Nothing *more* than feelings? What could be more important than feelings? Sure, *war* and *peace* may come to mind, but are war and peace important for any reason other than the feelings they produce? If war didn't cause pain and anguish, if peace didn't provide for delights both transcendental and carnal, would either of them matter to us at all? War, peace, art, money, marriage, birth, death, disease, religion—these are just a few of the Really Big

Topics over which oceans of blood and ink have been spilled, but they are really big topics for one reason alone: Each is a powerful source of human emotion. If they didn't make us *feel* uplifted, desperate, thankful, and hopeless, we would keep all that ink and blood to ourselves. As Plato asked, "Are these things good for any other reason except that they end in pleasure, and get rid of and avert pain? Are you looking to any other standard but pleasure and pain when you call them good?"¹⁹ Indeed, feelings don't just matter—they are what mattering *means*. We would expect any creature that feels pain when burned and pleasure when fed to call burning and eating *bad* and *good*, respectively, just as we would expect an asbestos creature with no digestive tract to find such designations arbitrary. Moral philosophers have tried for centuries to find some other way to define *good* and *bad*, but none has ever convinced the rest (or me). We cannot say that something is good unless we can say what it is good *for*, and if we examine all the many objects and experiences that our species calls good and ask what they are good *for*, the answer is clear: By and large, they are good for making us feel happy.

Given the importance of feelings, it would be nice to be able to say precisely what they are and how one might measure them. As we have seen, we can't do that with the kind of precision that scientists covet. Nonetheless, if the methodological and conceptual tools that science has developed do not allow us to measure the feelings of a single individual with pinpoint accuracy, they at least allow us to go stumbling in the dark with pickled rulers to measure dozens of individuals again and again. The problem facing us is a difficult one, but it is too important to ignore: Why do we so often fail to know what will make us happy in the future? Science offers some intriguing answers to this question, and now that we have a sense of the problem and a general method for solving it, we are ready to inspect them.

Chapter 6

The Future Is Now

Thy letters have transported me beyond
This ignorant present, and I feel now
The future in the instant.
--Shakespeare, *Cymbeline*

Most reasonably sized libraries have a shelf of futurist tomes from the 1950's with titles such as *Into the Atomic Age* and *The World of Tomorrow*. If you leaf through a few of them, you quickly notice that each of these books says more about the times in which it was written than about the times it was meant to foretell. Flip a few pages and you'll find a drawing of a housewife with a Donna Reed hairdo and a poodle skirt flitting about her atomic kitchen, waiting for the sound of her husband's rocket car before getting the tuna casserole on the table. Flip a few more and you'll see a sketch of a modern city under a glass dome, complete with nuclear trains, antigravity cars, and well-dressed citizens gliding smoothly to work on conveyor-belted sidewalks. You will also notice that some things are missing. The men don't carry babies, the women don't carry briefcases, the children don't have pierced eyebrows or nipples, and the mice go *squeak* instead of *click*. There are no skateboarders or panhandlers, no smartphones or smartdrinks, no spandex, latex, Gore-Tex, Amex, FedEx, or Wal-Mart. What's more, all the people of African, Asian, and Hispanic origin seem to have missed the future entirely. Indeed, what makes these drawings so charming is that they are utterly, fabulously, and ridiculously wrong. How could anyone ever have thought that the future would look like some hybrid of *Forbidden Planet* and *Father Knows Best*?

More of the Same

Underestimating the novelty of the future is a time-honored tradition. Lord William Thomson Kelvin was one of the most farsighted physicists of the nineteenth century (which is why we measure temperature in kelvins), but when he looked carefully into the world of tomorrow he concluded that "heavier-than-air flying machines are impossible."¹ Most of his fellow scientists agreed. As the eminent astronomer Simon Newcomb wrote in 1906: "The demonstration that no possible combination of known substances, known forms of machinery, and known forms of force, can be united in a practical machine by which man shall fly long distances through the air, seems to the writer as complete as it is possible for the demonstration of any physical fact to be."²

Even Wilbur Wright, who proved Kelvin and Newcomb wrong, admitted that in 1901 he had said to his brother that "man would not fly for fifty years."³ He was off by forty-eight. The number of respected scientists and accomplished inventors who declared the airplane an impossibility is exceeded only by the number who said the same thing about space travel, television sets, microwave ovens, nuclear power, heart transplants, and female senators. The litany of faulty forecasts, missed marks, and prophetic pratfalls is extensive, but let me ask you to ignore for a moment the sheer number of such mistakes and notice instead the similarity of their forms. The writer Arthur C. Clarke formulated what has come to be known as Clarke's first law: "When a distinguished but elderly scientist states that something is possible he is almost certainly right. When he states that something is impossible, he is very probably wrong."⁴ In other words, when scientists make erroneous predictions, they almost *always* err by predicting that the future will be too much like the present.

Presentism in the Past

Ordinary people are quite scientific in this regard. We have already seen how brains make ample use of the filling-in trick when they remember the past or imagine the future, and the phrase "filling in" suggests an image of a hole (for example, in a wall or a tooth) being plugged with some sort of material (Spackle or silver). As it turns out, when brains plug holes in their conceptualizations of yesterday and tomorrow, they tend to use a material called *today*. Consider how often this happens when we try to remember the past. When college students hear persuasive speeches that demonstrably change their

political opinions, they tend to remember that they always felt as they currently feel.⁵ When dating couples try to recall what they thought about their romantic partners two months earlier, they tend to remember that they felt then as they feel now.⁶ When students receive their grades on an exam, they tend to remember being as concerned about the exam before they took it as they currently are.⁷ When patients are asked about their headaches, the amount of pain they are feeling at the moment determines how much pain they remember feeling the previous day.⁸ When middle-aged people are asked to remember what they thought about premarital sex, how they felt about political issues, or how much alcohol they drank when they were in college, their memories are influenced by how they think, feel, and drink now.⁹ When widows and widowers are asked how much grief they felt when their spouse died five years earlier, their memories are influenced by the amount of grief they currently feel.¹⁰ The list goes on, but what's important to notice for our purposes is that in each of these instances, people misremember their own pasts by recalling that they once thought, did, and said what they now think, do, and say.¹¹

This tendency to fill in the holes in our memories of the past with material from the present is especially powerful when it comes to remembering our emotions. In 1992, after announcing on a syndicated television talk show that he would like to live in the White House, Ross Perot became the overnight messiah of a disaffected electorate. For the first time in American history it looked as though a man who had never held office and was not the nominee of a major political party might well win the most powerful job on earth. His supporters were enthusiastic and optimistic. But on July 16, 1992, as suddenly as he had burst onto the scene, Perot withdrew from the race, citing vague concerns about political “dirty tricks” that might spoil his daughter’s wedding. His supporters were devastated. Then, in October of the same year, Perot had yet another change of heart and reentered the race, which he ultimately lost the next month. Between his initial surprising announcement, his even more surprising withdrawal, his unbelievably surprising reentry, and his unsurprising defeat, those who supported him experienced a variety of intense emotions. Fortunately, a researcher was on hand to measure these emotional reactions in July, after Perot’s withdrawal, and then again in November, after his defeat.¹² The researcher also asked volunteers in November to recall how they had felt in July, and the findings were striking. Those who remained loyal to Perot throughout his flipping and flopping remembered feeling less sad and angry when he withdrew in July than they actually had been, whereas those who abandoned him when he abandoned them remembered being less hopeful than they had been. In other words, Perot supporters erroneously recalled feeling about Perot then as they felt about him now.

Presentism in the Future

If the past is a wall with some holes, the future is a hole with no walls. Memory *uses* the filling-in trick, but imagination *is* the filling-in trick, and if the present lightly colors our remembered pasts, it thoroughly infuses our imagined futures. More simply said, most of us have a tough time imagining a tomorrow that is terribly different from today, and we find it particularly difficult to imagine that we will ever think, want, or feel differently than we do now.¹³ Teenagers get tattoos because they are confident that DEATH ROCKS will always be an appealing motto, new mothers abandon promising law careers because they are confident that being home with their children will always be a rewarding job, and smokers who have just finished a cigarette are confident for at least five minutes that they can easily quit and that their resolve will not diminish with the nicotine in their bloodstreams. Psychologists have nothing on teenagers, smokers, and moms. I can recall a Thanksgiving (well, actually, most Thanksgivings) when I ate so much that I realized only as I swallowed my last bite of pumpkin pie that my breathing had become shallow and labored because my lungs no longer had room to expand. I staggered to the living room, fell flat on the couch, and, as I descended mercifully into a tryptophan coma, was heard to utter these words: “I’ll never eat again.” But, of course, I did eat again—possibly that night, surely within twenty-four hours, and probably turkey. I suppose I knew that my vow was absurd even as I made it, and yet, some part of me seemed sincerely to believe that chewing and swallowing were nasty habits that I could easily renounce, if only because the torpid mass that was winding its way through my digestive tract at the approximate speed of continental drift would supply all my nutritional, intellectual,

and spiritual needs forevermore.

I am appropriately embarrassed by this incident on several counts. First, I ate like a pig. Second, although I had eaten like a pig before and should therefore have known from experience that pigs always end up back at the trough, I really did think that *this time* I might not eat again for days, maybe weeks, maybe ever. I take small comfort in the fact that other pigs seem susceptible to precisely the same delusion. Research in laboratories and supermarkets has demonstrated that when people who have recently eaten try to decide what they will want to eat next week, they reliably underestimate the extent of their future appetites.¹⁴ The double-thick milkshakes, chicken-salad sandwiches, and jalapeno sausage pockets that they recently slurped, snarfed, and swallowed do not temporarily lower their intelligence. Rather, these folks just find it difficult to imagine being hungry when they are full and thus can't bring themselves to provide adequately for hunger's inevitable return. We go shopping after a breakfast of eggs, waffles, and Canadian bacon, end up buying too few groceries, and then, when the urge for coconut almond ice cream makes its regular nightly visit, we curse ourselves for having shopped so lightly.

What is true of sated stomachs is also true of sated minds. In one study, researchers challenged some volunteers to answer five geography questions and told them that after they had taken their best guesses they would receive one of two rewards: Either they would learn the correct answers to the questions they had been asked and thus find out whether they had gotten them right or wrong, or they would receive a candy bar but never learn the answers.¹⁵ Some volunteers chose their reward *before* they took the geography quiz, and some volunteers chose their reward only *after* they took the quiz. As you might expect, people preferred the candy bar before taking the quiz, but they preferred the answers after taking the quiz. In other words, taking the quiz made people so curious that they valued the answers more than a scrumptious candy bar. But do people know this will happen? When a new group of volunteers was asked to *predict* which reward they would choose before and after taking the quiz, these volunteers predicted that they would choose the candy bar in both cases. These volunteers—who had not actually *experienced* the intense curiosity that taking the quiz produced—simply couldn't imagine that they would ever forsake a Snickers for a few dull facts about cities and rivers. This finding brings to mind that wonderful scene in the 1967 film *Bedazzled* in which the devil spends his days in bookstores, ripping the final pages out of the mystery novels. This may not strike you as an act so utterly evil that it would warrant Lucifer's personal attention, but when you arrive at the end of a good whodunit only to find the whodunit part missing, you understand why people might willingly trade their immortal souls for the denouement. Curiosity is a powerful urge, but when you aren't smack-dab in the middle of feeling it, it's hard to imagine just how far and fast it can drive you.

These problems with forecasting our hungers—whether gustatory, sexual, emotional, social, or intellectual—are all too familiar. But why? Why are the powers of human imagination so easily humbled? This is, after all, the same imagination that produced space travel, gene therapy, the theory of relativity, and the Monty Python cheese-shop sketch. Even the least imaginative among us can imagine things so wild and weird that our mothers would wash our heads out with soap if only they knew. We can imagine being elected to Congress, dropped from a helicopter, painted purple and rolled in almonds. We can imagine life on a banana plantation and inside a submarine. We can imagine being slaves, warriors, sheriffs, cannibals, courtesans, scuba divers, and tax collectors. And yet, for some reason, when our bellies are stuffed with mashed potatoes and cranberry sauce, we can't imagine being *hungry*? How come?

Sneak Prefeel

The answer to this question takes us deep into the nature of imagination itself. When we imagine objects, such as penguins, paddle-boats, or Scotch-tape dispensers, most of us have the experience of actually *seeing* a somewhat sketchy picture of the object in our heads. If I were to ask you whether a penguin's flippers are longer or shorter than its feet, you would probably have the sense of conjuring up a mental image from airy nothing and then "looking" at it to determine the answer. You would feel as

though a picture of a penguin just popped into your head because you wanted it to, and you would have the sense of staring at the flippers for a moment, looking down and checking out the feet, glancing back up at the flippers, and then giving me an answer. What you were doing would feel a lot like seeing because, in fact, it is. The region of your brain that is normally activated when you see objects with your eyes—a sensory area called the visual cortex—is also activated when you inspect mental images with your mind’s eye.¹⁶ The same is true of other senses. For instance, if I were to ask on which syllable the high note in “Happy Birthday” is sung, you would probably play the melody in your imagination and then “listen” to it to determine where the pitch rises and falls. Again, this sense of “listening with your mind’s ear” is not just a figure of speech (especially since no one actually says this). When people imagine sounds, they show activation in a sensory area of the brain called the auditory cortex, which is normally activated only when we hear real sounds with our ears.¹⁷

These findings tell us something important about how the brain imagines, namely, that it enlists the aid of its sensory areas when it wants to imagine the sensible features of the world. If we want to know how a particular object looks when the object isn’t sitting there in front of us, we send information about the object from our memory to our visual cortex, and we experience a mental image. Similarly, if we want to know how a melody sounds when it isn’t currently on the radio, we send information about the object from our memory to our auditory cortex, and we experience a mental sound. Because penguins live in Antarctica and “Happy Birthday” is sung only on birthdays, neither of these things is usually there when we want to inspect it. When our eyes and ears do not feed the visual and auditory cortices the information they require to answer the questions we are asked, we request that the information be sent from memory, which allows us to take a fake look and have a fake listen. Because our brains can do this trick, we are able to discover things about songs (the high note occurs on *birth*) and birds (the flippers are longer than the feet) even when we are all alone in a closet.

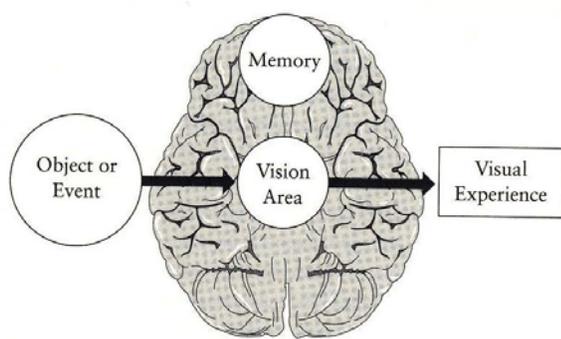
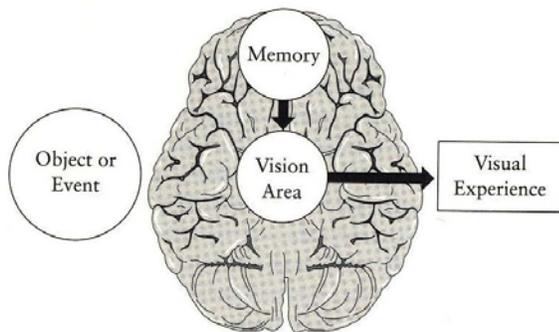


Fig. 10. Visual perception (above) gets information from objects and events in the world, whereas visual imagination (below) gets information from memory.



imaginary events as well, which is why your pupils probably dilated and your blood pressure probably rose when I asked you to imagine this particular instance of special delivery.¹⁹ This is a clever method for predicting future feelings, because how we feel when we imagine an event is usually a good indicator of how we will feel when the event itself transpires. If mental images of rapid breathing and

Using the visual and auditory areas to execute acts of imagination is a truly ingenious bit of engineering, and evolution deserves the Microsoft Windows Award for installing it in every one of us without asking permission. But what do seeing and hearing have to do with Thanksgiving gluttons like us—well, at least like me? As it turns out, the imaginative processes that allow us to discover how a penguin looks even when we are locked in a closet are the same processes that allow us to discover how the future will feel when we are locked in the present. The moment someone asks you how much you would enjoy finding your partner in bed with the mailman, you *feel* something. Probably something not so good. Just as you generate a mental image of a penguin and then visually inspect it in order to answer questions about its flippers, so do you generate a mental image of an infidelity and then emotionally react to it in order to answer questions about your future feelings.¹⁸ The areas of your brain that respond emotionally to real events respond emotionally to

flailing mailbags induce pangs of jealousy and waves of anger, then we should expect a real infidelity to do so with even greater swiftness and reliability.

It doesn't take something as emotionally charged as infidelity to illustrate this fact. Every day we say things like "Pizza sounds pretty good to me," and despite the literal meaning of that utterance, we are not commenting on the acoustic properties of mozzarella. Rather, we are saying that when we imagine eating pizza we experience a small, lovely feeling, and that we interpret this feeling as an indicator of the even larger and lovelier feeling we would experience if we could just get the pizza out of our imaginations and into our mouths. When a Chinese host offers us an appetizer of sautéed spider or crispy grasshopper, we don't have to chew one to know how much we'd dislike the actual experience, because the mere thought of eating bugs causes most North Americans to shudder in disgust, and that shudder tells us that the real thing is likely to induce full-blown nausea. The point here is that we generally do not sit down with a sheet of paper and start logically listing the pros and cons of the future events we are contemplating, but rather, we contemplate them by simulating those events in our imaginations and then noting our emotional reactions to that simulation. Just as imagination *previews* objects, so does it *pre feel* events.²⁰

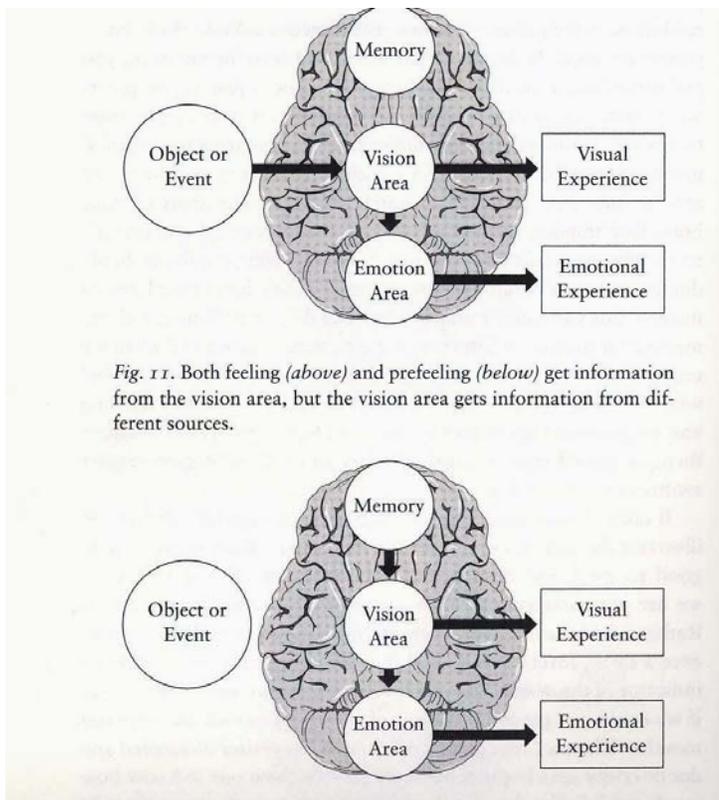


Fig. 11. Both feeling (*above*) and prefeeling (*below*) get information from the vision area, but the vision area gets information from different sources.

The Power of Prefeeling

Prefeeling often allows us to predict our emotions better than logical thinking does. In one study, researchers offered volunteers a reproduction of an Impressionist painting or a humorous poster of a cartoon cat.²¹ Before making their choices, some volunteers were asked to think logically about why they thought they might like or dislike each poster (thinkers), whereas others were encouraged to make their choices quickly and "from the gut" (nonthinkers). Career counselors and financial advisors always tell us that we should think long and hard if we wish to make sound decisions, but when the researchers phoned the volunteers later and asked how much they liked their new objet d'art, the thinkers were the least satisfied. Rather than choosing the poster that had made them feel happy when they imagined hanging it in their homes, thinkers had ignored their prefeelings and had instead chosen posters that possessed the qualities of which a career counselor or

financial advisor would approve ("The olive green in the Monet may clash with the drapes, whereas the Garfield poster will signal to visitors that I have a scintillating sense of humor"). Nonthinkers, on the other hand, trusted their prefeelings: They imagined the poster on their wall, noted how they felt when they did so, and assumed that if imagining the poster on their wall made them feel good, then actually seeing it on their wall would probably do the same. And they were right. Prefeeling allowed nonthinkers to predict their future satisfaction more accurately than thinkers did. Indeed, when people are prevented from feeling emotion in the present, they become temporarily unable to predict how they will feel in the future.²²

But prefeeling has limits. How we feel when we imagine something is not *always* a good guide to how we will feel when we see, hear, wear, own, drive, eat, or kiss it. For example, why do you close your eyes when you want to visualize an object, or jam your fingers in your ears when you want to

remember the melody of a certain song? You do these things because your brain must use its visual and auditory cortices to execute acts of visual and auditory imagination, and if these areas are already busy doing their primary jobs namely, seeing and hearing things in the real world—then they are not available for acts of imagination.²³ You cannot easily imagine a penguin when you are busy inspecting an ostrich because vision is already using the parts of your brain that imagination needs. Put differently, when we ask our brains to look at a real object and an imaginary object at the same time, our brains typically grant the first request and turn down the second. The brain considers the perception of reality to be its first and foremost duty, thus your request to borrow the visual cortex for a moment is expressly and summarily denied. If the brain didn't have this Reality First policy, you'd drive right through a red light if you just so happened to be thinking about a green one. The policy that makes it difficult to imagine penguins when we are looking at ostriches also makes it difficult to imagine lust when we are feeling disgust, affection when we are feeling anger, or hunger when we are feeling full. If a friend were to wreck your new car and then offer to make amends by taking you to a baseball game the following week, your brain would be too busy responding to the car wreck to simulate your emotional response to the game. Future events may request access to the emotional areas of our brains, but current events almost always get the right of way.

The Limits of Prefeeling

We can't see or feel two things at once, and the brain has strict priorities about what it will see, hear, and feel and what it will ignore. Imagination's requests are often denied. Both the sensory and emotional systems enforce this policy, and yet, we seem to recognize when the sensory systems are turning down imagination's requests but fail to recognize when the emotional system is doing the same. For instance, if we try to imagine a penguin while we are looking at an ostrich, the brain's policy won't allow it. We understand this, and thus we never become confused and mistakenly conclude that the large bird with the long neck that we are currently seeing is, in fact, the penguin that we were attempting to imagine. The visual experience that results from a flow of information that originates in the world is called *vision*; the visual experience that results from a flow of information that originates in memory is called *mental imagery*; and while both kinds of experiences are produced in the visual cortex, it takes a great deal of vodka before we mix them up.²⁴ One of the hallmarks of a visual experience is that we can almost always tell whether it is the product of a real or an imagined object. But not so with emotional experience. The emotional experience that results from a flow of information that originates in the world is called *feeling*; the emotional experience that results from a flow of information that originates in memory is called *pre feeling*; and mixing them up is one of the world's most popular sports.

For example, in one study, researchers telephoned people in different parts of the country and asked them how satisfied they were with their lives.²⁵ When people who lived in cities that happened to be having nice weather that day imagined their lives, they reported that their lives were relatively happy; but when people who lived in cities that happened to be having bad weather that day imagined their lives, they reported that their lives were relatively unhappy. These people tried to answer the researcher's question by imagining their lives and then asking themselves how they felt when they did so. Their brains enforced the Reality First policy and insisted on reacting to real weather instead of imaginary lives. But apparently, these people didn't *know* their brains were doing this and thus they mistook reality-induced feelings for imagination-induced prefeelings.

In a related study, researchers asked people who were working out at a local gym to predict how they would feel if they became lost while hiking and had to spend the night in the woods with neither food nor water.²⁶ Specifically, they were asked to predict whether their hunger or their thirst would be more unpleasant. Some people made this prediction just after they had worked out on a treadmill (thirsty group), and some made this prediction before they worked out on a treadmill (nonthirsty group). The results showed that 92 percent of the people in the thirsty group predicted that if they were lost in the woods, thirst would be more unpleasant than hunger, but only 61 percent of the people in the nonthirsty group made that prediction. Apparently, the thirsty people tried to answer the researcher's question by

imagining being lost in the woods without food and water and then asking themselves how they felt when they did so. But their brains enforced the Reality First policy and insisted on reacting to the real workout rather than the imaginary hike. Because these people didn't *know* their brains were doing this, they confused their feelings and prefeelings.

You've probably been in a similar conundrum yourself. You've had an awful day—the cat peed on the rug, the dog peed on the cat, the washing machine is busted, *World Wrestling* has been preempted by *Masterpiece Theatre*—and you naturally feel out of sorts. If at that moment you try to imagine how much you would enjoy playing cards with your buddies the next evening, you may mistakenly attribute feelings that are due to the misbehavior of real pets and real appliances (“I feel annoyed”) to your imaginary companions (“I don't think I'll go because Nick always ticks me off”). Indeed, one of the hallmarks of depression is that when depressed people think about future events, they cannot imagine liking them very much.⁷ *Vacation? Romance? A night on the town? No thanks, I'll just sit here in the dark.* Their friends get tired of seeing them flail about in a thick blue funk, and they tell them that this too shall pass, that it is always darkest before the dawn, that every dog has its day, and several other important clichés. But from the depressed person's point of view, all the flailing makes perfectly good sense because when she imagines the future, she finds it difficult to feel happy today and thus difficult to believe that she will feel happy tomorrow.

We cannot feel good about an imaginary future when we are busy feeling bad about an actual present. But rather than recognizing that this is the inevitable result of the Reality First policy, we mistakenly assume that the future event is the *cause* of the unhappiness we feel when we think about it. Our confusion seems terribly obvious to those who are standing on the sidelines, saying things like “You're feeling low right now because Pa got drunk and fell off the porch, Ma went to jail for whupping Pa, and your pickup truck got repossessed—but everything will seem different next week and you'll really wish you'd decided to go with us to the opera.” At some level we recognize that our friends are probably right. Nonetheless, when we try to overlook, ignore, or set aside our current gloomy state and make a forecast about how we will feel tomorrow, we find that it's a lot like trying to imagine the taste of marshmallow while chewing liver.²⁸ It is only natural that we should imagine the future and then consider how doing so makes us feel, but because our brains are hell-bent on responding to current events, we mistakenly conclude that we will feel tomorrow as we feel today.

Onward

I've been waiting a long, long time to show someone this cartoon (figure 12), which I clipped from a newspaper in 1983 and have kept tacked to one bulletin board or another ever since. It never fails to delight me. The sponge is being asked to imagine without limits—to envision what it might like to be if the entire universe of possibilities were open to it—and the most exotic thing it can imagine becoming is an arthropod. The cartoonist isn't making fun of sponges, of course; he's making fun of us. Each of us is trapped in a place, a time, and a circumstance, and our attempts to use our minds to transcend those boundaries are, more often than not, ineffective. Like the sponge, we think we are thinking outside the



Fig. 12.

box only because we can't see how big the box really is. Imagination cannot easily transcend the boundaries of the present, and one reason for this is that it must borrow machinery that is owned by

perception. The fact that these two processes must run on the same platform means that we are sometimes confused about which one is running. We assume that what we feel as we imagine the future is what we'll feel when we get there, but in fact, what we feel as we imagine the future is often a response to what's happening in the present. The time-share arrangement between perception and imagination is one of the causes of presentism, but it is not the only one. So if the train hasn't yet arrived at your stop, if you aren't quite ready to turn out the light and go to sleep, or if the folks at Starbucks aren't giving you dirty looks as they get out the mops, let's explore another.

Chapter 7 Time Bombs

“And yet not cloy thy lips with loathed satiety,
But rather famish them amid their plenty,
Making them red and pale with fresh variety—
Ten kisses short as one, one long as twenty.
A summer’s day will seem an hour but short,
Being wasted in such time-beguiling sport.”
--Shakespeare, *Venus and Adonis*

No one has ever witnessed the passage of a flying Winnebago, and everyone has witnessed the passage of time. So why is it so much easier to imagine the former than the latter? Because as unlikely as it is that a twenty-thousand-pound recreational vehicle could ever achieve sufficient lift to become airborne, a flying Winnebago would at least look like *something*, and thus we have no trouble producing a mental image of one. Our extraordinary talent for creating mental images of concrete objects is one of the reasons why we function so effectively in the physical world.¹ If you imagine a grapefruit sitting atop a round oatmeal box and then imagine tilting the box away from you, you can actually preview the grapefruit as it falls, and you can see that it will fall toward you when you tilt the box quickly but fall away from you when you tilt the box slowly. Such acts of imagination allow you to reason about the things you are imagining and hence solve important problems in the real world, such as how to get a grapefruit into your lap when you really need one. But time is no grapefruit. It has no color, shape, size, or texture. It cannot be poked, peeled, prodded, pushed, painted, or pierced. Time is not an object but an abstraction, hence it does not lend itself to imagery, which is why filmmakers are forced to represent the passage of time with contrivances that involve visible objects, such as calendar leaves blowing in the wind or clocks spinning at warp speed. And yet, predicting our emotional futures requires that we think in and about and across swathes of time. If we can’t create a mental image of an abstract concept such as time, then how do we think and reason about it?

Space Think

When people need to reason about something abstract, they tend to imagine something concrete that the abstract thing is *like* and then reason about that instead.² For most of us, *space* is the concrete thing that *time* is like.³ Studies reveal that people all over the world imagine time as though it were a spatial dimension, which is why we say that the past is *behind* us and the future is in front of us, that we are *moving toward* our senescence and *looking back* on our infancy, and that days *pass us by* in much the same way that a flying Winnebago might. We think and speak as though we were *actually moving away* from a yesterday that is located over there and *toward* a tomorrow that is located 180 degrees about. When we draw a time line, those of us who speak English put the past on the left, those of us who speak Arabic put the past on the right,⁴ and those of us who speak Mandarin put the past on the bottom.⁵ But regardless of our native tongue, we all put the past someplace—and the future *someplace else*. Indeed, when we want to solve a problem that involves time—for instance, “If I ate breakfast before I walked the dog but after I read the newspaper, then what did I do first?”—most of us imagine putting three objects (breakfast, dog, newspaper) in an orderly line and then checking to see which one is furthest to the left (or right, or bottom, depending on our language). Reasoning by metaphor is an ingenious technique that allows us to remedy our weaknesses by capitalizing on our strengths—using things we can visualize to think, talk, and reason about things we can’t.

Alas, metaphors can mislead as well as illuminate, and our tendency to imagine time as a spatial dimension does both of these things. For example, imagine that you and a friend have managed to get a table at a chic new restaurant with a three-month waiting list, and that after browsing the menus you have discovered that you both want the wasabi-encrusted partridge. Now, each of you has sufficient social grace to recognize that placing identical orders at a fine restaurant is roughly equivalent to wearing matching mouse ears in the main dining room, so you decide instead that one of you will order

the partridge, the other will order the venison gumbo, and that you will then share them oh so fashionably. You do this not only to avoid being mistaken for tourists but also because you believe that variety is the spice of life. There are very few homilies involving spices, and this one is as good as they get. Indeed, if we were to measure your pleasure after the meal, we would probably find that you and your friend are happier with the sharing arrangement than either of you would have been had you each had a full order of partridge to yourselves.

But something strange happens when we extend this problem in time. Imagine that the maître d' is so impressed by your sophisticated ensemble that he invites you (but alas, not your friend, who really could use a new look) to return on the first Monday of every month for the next year to enjoy a free meal at his best table. Because the kitchen occasionally runs short of ingredients, he asks you to decide right now what you would like to eat on each of your return visits so that he can be fully prepared to pamper you in the style to which you are quickly becoming accustomed. You flip back through the menu. You hate rabbit, veal is politically incorrect, you are appropriately apathetic about vegetable lasagna, and as you scan the list you decide that there are just four dishes that strike your rapidly swelling fancy: the partridge, the venison gumbo, the blackened mahimahi, and the saffron seafood risotto. The partridge is clearly your favorite, and even without a pear tree you are tempted to order twelve of them. But that would be so gauche, so déclassé, and what's more, you would miss the spice of life. So you ask the maître d' to prepare the partridge every other month, and to fill in the remaining six meals with equal episodes of gumbo, mahimahi, and risotto.

You may be one snappy dresser; *mon ami*, but when it comes to food, you have just cooked your own goose.⁶ Researchers studied this experience by inviting volunteers to come to the laboratory for a snack once a week for several weeks.⁷ They asked some of the volunteers (choosers) to choose all their snacks in advance, and—just as you did—the choosers usually opted for a healthy dose of variety. Next, the researchers asked a new group of volunteers to come to the lab once a week for several weeks. They fed some of these volunteers their favorite snack every time (no-variety group), and they fed other volunteers their favorite snack on most occasions and their second-favorite snack on others (variety group). When they measured the volunteers' satisfaction over the course of the study, they found that volunteers in the no-variety group were more satisfied than were volunteers in the variety group. In other words, variety made people less happy, not more. Now wait a second—there's something fishy here, and it isn't the mahimahi. How can variety be the spice of life when one sits down with a friend at a fancy restaurant but the bane of one's existence when one orders snacks to be consumed in successive weeks?

Among life's cruelest truths is this one: Wonderful things are especially wonderful the first time they happen, but their wonderfulness wanes with repetition.⁸ Just compare the first and last time your child said "Mama" or your partner said "I love you" and you'll know exactly what I mean. When we have an experience hearing a particular sonata, making love with a particular person, watching the sun set from a particular window of a particular room—on successive occasions, we quickly begin to adapt to it, and the experience yields less pleasure each time. Psychologists call this *habituation*, economists call it *declining marginal utility*, and the rest of us call it marriage. But human beings have discovered two devices that allow them to combat this tendency: variety and time. One way to beat habituation is to increase the variety of one's experiences ("Hey, honey, I have a kinky idea—let's watch the sun set from *the kitchen* this time").⁹ Another way to beat habituation is to increase the amount of time that separates repetitions of the experience. Clinking champagne glasses and kissing one's spouse at the stroke of midnight would be a relatively dull exercise were it to happen every evening, but if one does it on New Year's Eve and then allows a full year to pass before doing it again, the experience will offer an endless bouquet of delights because a year is plenty long enough for the effects of habituation to disappear. The point here is that time and variety are two ways to avoid habituation, and if you have one, then you don't need the other. In fact (and this is the really critical point, so please put down your fork and listen), when episodes are sufficiently separated in time, variety is not only unnecessary—it can actually be costly.

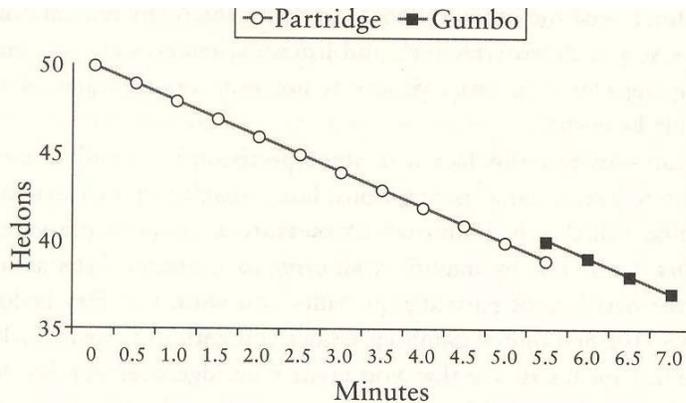


Fig. 13. Variety increases pleasure when consumption is rapid.

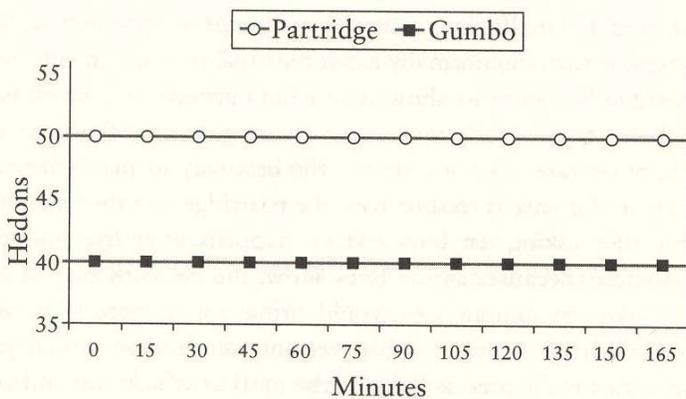


Fig. 14. Variety reduces pleasure when consumption is slow.

happens after five minutes). Why switch? Because, as the lines show, the eleventh bite of partridge (taken at minute 5.5) would bring you a mere thirty-nine hedons, whereas a bite of the as-yet-untasted gumbo would yield forty. So this is the precise point in the meal at which you and your friend should trade plates, seats, or at least mouse ears.¹⁰ But now look at figure 14 and notice how radically things change when we extend this gastronomic episode in time by altering your consumption rate. When your bites are separated by anything greater than ten minutes (in this case, fifteen minutes), then habituation no longer occurs, which means that every bite is as good as the first and a bite of gumbo is *never* better than a bite of partridge. In other words, if you could eat slowly enough, then variety would not only be unnecessary, it would actually be *costly*, because a bite of gumbo would always provide less pleasure than yet another bite of partridge.

Now, when you and your friend sat down at the imaginary restaurant together, you ordered two dishes to be eaten simultaneously. You knew that you wouldn't have much time between bites, so you asked for variety to spice things up. Good call. But when the maître'd asked you to order a sequence of meals in advance, you asked for variety then too. Why did you ask for variety when you already had time? Blame the spatial metaphor (see figure 15). Because you thought of dishes that were separated in time by imagining dishes that were separated by a few inches on a single table, you assumed that what was true of spatially separated dishes would be true of temporally separated dishes as well. When dishes are separated by space, it makes perfectly good sense to seek variety. After all, who would want to sit down at a table with twelve identical servings of partridge? We love sampler plates, pupu platters, and all-you-can-eat buffets because we want—and *should* want—variety among alternatives that we will experience in a single episode. The problem is that when we reason by metaphor and think of a dozen successive meals in a dozen successive months as though they were a dozen dishes arranged on a long table in front of us,

I can illustrate this fact with some precision if you allow me to make a few reasonable assumptions. First, imagine that we can use a machine called a hedonimeter to measure a person's pleasure in *hedons*. Let's start by making a *favoring assumption*: Let's assume that the first bite of partridge provides you with, say, fifty hedons, whereas the first bite of gumbo provides you with forty hedons. This is what it means to say that you favor partridge over gumbo. Second, let's make a *habituation-rate assumption*: Let's assume that once you take a bite of a dish, each subsequent bite of the same dish taken within, say, ten minutes, provides one less hedon than the bite before it did. Finally, let's make a *consumption-rate assumption*: Let's assume that you normally eat at the brisk pace of one bite every thirty seconds. Figure 13 shows you what happens to your pleasure if we make these assumptions about favoring, habituation rate, and consumption rate. As you can see, the best way to maximize your pleasure in this case is to start with the partridge and then switch to gumbo after taking ten bites (which

we mistakenly treat sequential alternatives as though they were *simultaneous* alternatives. This is a mistake because sequential alternatives already have time on their side, hence variety makes them less pleasurable rather than more.

Starting Now

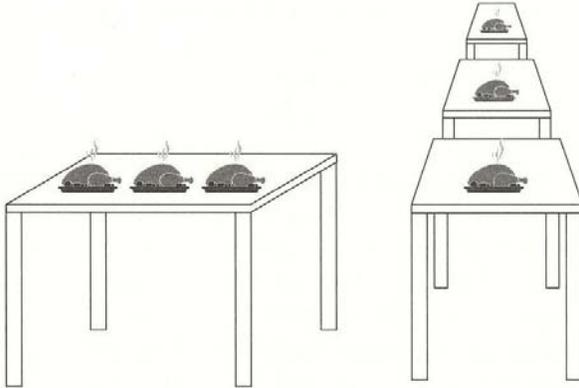


Fig. 15. Simultaneous consumption (left) and sequential consumption (right).

Because time is so difficult to imagine, we sometimes imagine it as a spatial dimension. And sometimes we just don't imagine it at all. For example, when we imagine future events, our mental images will usually include the relevant people, places, words, and actions, but they rarely include a clear indication of the time at which those people in those places are speaking and acting. When we imagine ourselves discovering our spouse's infidelity on New Year's Eve, our mental image looks very much like a mental image of ourselves discovering the infidelity on Purim, Halloween, or Russian Orthodox Easter. Indeed, the mental image

of *finding your spouse in bed with the mailman on New Year's Eve* changes dramatically when you substitute *barber* for *spouse*, or *conversation* for *bed*, but hardly at all when you substitute *Thanksgiving* for *New Year's Eve*. In fact, it is just about impossible to make this substitution because, alas, there is nothing in the mental image to change. We can inspect a mental image and see who is doing *what* and *where*, but not when they are doing it. In general, mental images are *atemporal*.¹¹

So how do we decide how we will feel about things that are going to happen in the future? The answer is that we tend to imagine how we would feel if those things happened *now*, and then we make some allowance for the fact that *now* and *later* are not exactly the same thing. For instance, ask a heterosexual teenage boy how he would feel if one of the Budweiser babes were to show up at his door right now, bikini-clad, cooing, and in desperate need of a massage. His reaction will be visible. He will smile, his eyes will widen, his pupils will contract, his cheeks will flush, and other systems will respond as nature intended. Now, if you ask a different teenage boy precisely the same question but substitute the phrase in *fifty years for right now*, you will notice approximately the same initial response. Indeed, for a moment you might even suspect that this second teenager is focusing entirely on his mental image of the barefoot goddess with the bee-sting lips and that he is failing to consider the fact that this imaginary event is supposed to be taking place a half-century hence. But give him some time—say, a few hundred milliseconds. As the milliseconds pass, you will notice that his initial rush of enthusiasm fades as he considers the date of the imaginary event, realizes that adolescent males have one set of needs and grandfathers another, and correctly concludes that a cameo appearance by a nubile nymphet will probably not be quite as stimulating in his golden years as it would be in his testosterone-charged present. His initial flip and subsequent flop are quite revealing because they suggest that when he was asked to imagine the future event, he began by imagining the event as though it were happening in the present and only *then* considered the fact that the event would take place in the future, when maturity will have taken its inevitable toll on his eyesight and his libido.

Why does this matter? After all, in the final analysis the teenager did take into account the fact that *now* and *five decades from now* are not the same thing, so who cares if he considered this fact only *after* he was momentarily transfixed by his mental image of the airbrushed vixen from Planet Bud? I care. And you should care too. By imagining the event happening *now* and then correcting for the fact that it

was actually going to happen *later*, the teenager used a method for making judgments that is quite common but that inevitably leads to error.¹² To understand the nature of this error, consider a study in which volunteers were asked to guess how many African countries belonged to the United Nations.¹³ Rather than answering the question straightaway, the volunteers were asked to make their judgments by using the flip-then-flop method. Some volunteers were asked to give their answer by saying how much larger or smaller it was than ten, and other volunteers were asked to answer by saying how much larger or smaller it was than sixty. In other words, volunteers were given an arbitrary *starting point* and were asked to *correct* it until they reached an appropriate *ending point*—just as the teenager used an image of a beautiful woman in the present moment as a starting point for his judgment (“I’m wildly excited!”) and then corrected it to achieve an ending point for his judgment (“But since I’ll be sixty-seven years old when all this happens, I probably won’t be quite as excited as I am now”).

The problem with this method of making judgments is that starting points have a profound impact on ending points. Volunteers who started with ten guessed that there were about twenty-five African nations in the U.N., whereas volunteers who started with sixty guessed that there were about forty-five. Why such different answers? Because volunteers began their task by asking themselves whether the starting point could be the right answer, and then, realizing that it could not, moved slowly toward a more reasonable one (“Ten can’t be right. How about twelve? No, still too low. Fourteen? Maybe twenty-five?”).¹⁴ Alas, because this process requires time and attention, the group that started with ten and the group that started with sixty got tired and quit before they met in the middle. This really isn’t so strange. If you asked a child to count upward from zero and another child to count downward from a million, you could be pretty sure that when they finally got exhausted, gave up, and went off in search of eggs to throw at your garage door, they would have reached very different numbers. Starting points matter because we often end up close to where we started.

When people predict future feelings by imagining a future event as though it were happening in the present and then correcting for the event’s actual location in time, they make the same error. For example, volunteers in one study were asked to predict how much they would enjoy eating a bite of spaghetti and meat sauce the next morning or the next afternoon.¹⁵ Some of the volunteers were hungry when they made this prediction, and some were not. When volunteers made these predictions under ideal conditions, they predicted that they would enjoy spaghetti more in the afternoon than in the morning, and their current hunger had little impact on their predictions. But some of the volunteers made these predictions under less-than-ideal conditions. Specifically, they were asked to make these predictions while simultaneously performing a second task in which they had to identify musical tones. Research has shown that performing a simultaneous task such as this one causes people to stay very close to their starting points. And indeed, when volunteers made predictions while identifying musical tones, they predicted that they would like spaghetti just as much in the morning as in the afternoon. What’s more, their current hunger had a strong impact on their predictions, so that hungry volunteers expected to like spaghetti the next day (no matter when they ate it) and sated volunteers expected to dislike spaghetti the next day (no matter when they ate it). This pattern of results suggests that all volunteers made their predictions by the flip-then-flop method: They first imagined how much they would enjoy eating the spaghetti in the present (“Yum!” if they were hungry and “Yuck!” if they were full) and used this prefeeling as a starting point for their prediction of tomorrow’s pleasures. Then, just as the hypothetical teenager corrected his judgment when he considered the fact that his current appreciation of a curvaceous coquette would probably be different fifty years later, the volunteers corrected their judgments by considering the time of day at which the spaghetti would be eaten (“Spaghetti for dinner is terrific, but spaghetti for breakfast? Yuck!”). However volunteers who had made their predictions while identifying musical tones were unable to correct their judgments, and as such, their ending point was quite close to their starting point. Because we naturally use our present feelings as a starting point when we attempt to predict our future feelings, we expect our future to feel a bit more like our present than it actually will.¹⁶

Next to Nothing

If you have no special talents or intriguing deformities but are still harboring a secret desire to get into *Guinness World Records*, here's something you might try: March into your boss's office on Monday morning and say, "I've been with the company for some time, I believe my work has been excellent, and I'd like a fifteen percent pay cut. . . though I could settle for ten if that's all the firm can manage right now." The Guinness folks will be taking careful notes because in the long and often contentious history of labor relations, it is unlikely that anyone has ever before demanded a pay cut. Indeed, people *hate* pay cuts, but research suggests that the reason they hate pay cuts has very little to do with the *pay* part and everything to do with the *cut* part. For instance, when people are asked whether they would prefer to have a job at which they earned \$30,000 the first year, \$40,000 the second year and \$50,000 the third year, or a job at which they earned \$60,000 then \$50,000 then \$40,000, they generally prefer the job with the increasing wages, despite the fact that they would earn less money over the course of the three years.¹⁷ This is quite curious. Why would people be willing to reduce their total income in order to avoid experiencing a cut in pay?

Comparing with the Past

If you've ever fallen asleep one night with the television blaring and been awakened another night by a single footstep, then you already know the answer. The human brain is not particularly sensitive to the absolute magnitude of stimulation, but it is extraordinarily sensitive to differences and changes—that is, to the *relative* magnitude of stimulation. For example, if I blindfolded you and asked you to hold a wooden block in your hand, would you be able to tell if I then placed a pack of gum on top of it? The right answer is "It depends," and what it depends on is the weight of the block. If the block weighed only an ounce, then you'd immediately notice the 500 percent increase in weight when I added a five-ounce pack of gum. But if the block weighed ten pounds, then you'd never notice the .03 percent increase in weight. There is no answer to the question "Can people detect five ounces?" because brains do not detect ounces, they detect changes in ounces and differences in ounces, and the same is true for just about every physical property of an object. Our sensitivity to relative rather than absolute magnitudes is not limited to physical properties such as weight, brightness, or volume. It extends to subjective properties, such as value, goodness, and worth as well.¹⁸ For instance, most of us would be willing to drive across town to save \$50 on the purchase of a \$100 radio but not on the purchase of a \$100,000 automobile because \$50 seems like a fortune when we're buying radios ("Wow, Target has the same radio for half off!") but a pittance when we're buying cars ("Like I'm going to schlep across the city just to get this car for one twentieth of a percent less?").¹⁹

Economists shake their heads at this kind of behavior and will correctly tell you that your bank account contains absolute dollars and not "percentages off." If it is worth driving across town to save \$50, then it doesn't matter which item you're saving it on because when you spend these dollars on gas and groceries, the dollars won't know where they came from.²⁰ But these economic arguments fall on deaf ears because human beings don't think in absolute dollars. They think in relative dollars, and fifty is or isn't a lot of dollars depending on what it is relative to (which is why people who don't worry about whether their mutual-fund manager is keeping 0.5 or 0.6 percent of their investment will nonetheless spend hours scouring the Sunday paper for a coupon that gives them 40 percent off a tube of toothpaste). Marketers, politicians, and other agents of influence know about our obsession with relative magnitudes and routinely turn it to their own advantage. For instance, one ancient ploy involves asking someone to pay an unrealistically large cost ("Would you come to our Save the Bears meeting next Friday and then join us Saturday for a protest march at the zoo?") before asking them to pay a smaller cost ("Okay then, could you at least contribute five dollars to our organization?"). Studies show that people are much more likely to agree to pay the small cost after having first contemplated the large one, in part because doing so makes the small cost seem so...er, bearable.²¹

Because the subjective value of a commodity is relative, it shifts and changes depending on what we compare the commodity to. For instance, every morning on my walk to work I stop at my neighborhood

Starbucks and hand \$1.89 to the barista, who then hands me twenty ounces of better-than-average coffee. I have no idea what it costs Starbucks to make this coffee, and I have no idea why they have chosen to charge me this particular amount, but I do know that if I stopped in one morning and found that the price had suddenly jumped to \$2.89, I would immediately do one of two things: I would compare the new price to the price I used to pay, conclude that coffee at Starbucks had gotten too damned expensive, and invest in one of those vacuum-sealed travel mugs and start brewing my coffee at home; or I would compare the new price to the price of other things I could buy with the same amount of cash (e.g., two felt-tip markers, a thirty-two-inch branch of artificial bamboo, or i/iooth of the twenty-CD boxed set *The Complete Miles Davis at Montreux*) and conclude that the coffee at Starbucks was a bargain. In theory I could make either of these comparisons, so which one would I actually make?

We both know the answer to that: I'd make the easy one. encounter a \$2.89 cup of coffee, it's all too easy for me to recall what I paid for coffee the day before and not so easy for me to imagine all the other things I might buy with my money.¹² Because it is so much easier for me to *remember the past* than to *generate new possibilities*, I will tend to compare the present with the past even when I *ought* to be comparing it with the possible. And that is indeed what I *ought* to be doing because it really doesn't matter what coffee cost the day before, the week before, or at any time during the Hoover administration. Right now I have absolute dollars to spend and the only question I need to answer is how to spend them in order to maximize my satisfaction. If an international bean embargo suddenly caused the price of coffee to skyrocket to \$10,000 per cup, then the only question I would need to ask myself is: "What else can I do with ten thousand dollars, and will it bring me more or less satisfaction than a cup of coffee?" If the answer is "more," then I should walk away. If the answer is "less," then I should get a cup of coffee. And an accountant with a whip.

The fact that it is so much easier to remember the past than to generate the possible causes us to make plenty of weird decisions. For instance, people are more likely to purchase a vacation package that has been marked down from \$600 to \$500 than an identical package that costs \$400 but that was on sale the previous day for \$300.²³ Because it is easier to compare a vacation package's price with its former price than with the price of other things one might buy, we end up preferring bad deals that have become decent deals to great deals that were once amazing deals. The same tendency leads us to treat commodities that have a "memorable past" differently from those that don't. For example, imagine that you have a \$20 bill and a \$20 concert ticket in your wallet, but when you arrive at the concert you realize that you've lost the ticket en route. Would you buy a new one? Most people say no.²⁴ Now imagine that instead of a \$20 bill and a \$20 ticket, you have two \$20 bills in your wallet, and when you arrive at the concert you realize that you've lost one of the bills en route. Would you buy a concert ticket? Most people say yes. It doesn't take a logician to see that the two examples are identical in all the ways that matter: In both cases you've lost a piece of paper that was valued at \$20 (a ticket or a bill), and in both cases you must now decide whether to spend the money that remains in your wallet on a concert. Nonetheless, our stubborn insistence on comparing the present to the past leads us to reason differently about these functionally equivalent cases. When we lose a \$20 bill and then contemplate buying a concert ticket for the first time, the concert has no past, hence we correctly compare the cost of seeing the concert with other possibilities ("Should I spend twenty dollars to see the concert, or should I buy some new sharkskin mittens?"). But when we lose a ticket we've previously purchased and contemplate "replacing it," the concert has a past, and hence we compare the current cost of seeing the concert (\$40) with its previous cost (\$20) and feel disinclined to see a performance whose price has suddenly doubled.

Comparing with the Possible

We make mistakes when we compare with the past instead of the possible. When we *do* compare with the possible, we still make mistakes. For example, if you're like me, your living room is a mini-warehouse of durable goods ranging from chairs and lamps to stereos and television sets. You probably shopped around a bit before buying these items, and you probably compared the one you ultimately

bought with a few alternatives—other lamps in the same catalog, other chairs on the showroom floor, other stereos on the same shelf, other televisions at the same mall. Rather than deciding *whether* to spend money, you were deciding *how* to spend money, and all the possible ways of spending your money were laid out for you by the nice folks who wanted it. These nice folks helped you overcome your natural tendency to compare with the past (“Is this television really that much better than my old one?”) by making it extremely easy for you to compare with the possible (“When you see them side by side here in the store, the Panasonic has a much sharper picture than the Sony”). Alas, we are all too easily fooled by such side-by-side comparisons, which is why retailers work so hard to ensure that we make them.

For example, people generally don’t like to buy the most expensive item in a category, hence retailers can improve their sales by stocking a few *very* expensive items that no one actually buys (“Oh my God, the 1982 Château Haut-Brion Pessac-Léognan sells for five hundred dollars a bottle!”) but that make less expensive items seem like a bargain by comparison (“I’ll just stick with the sixty-dollar zinfandel”)²⁵ Unscrupulous real estate agents bring buyers to dilapidated dumps that are conveniently located between a massage parlor and a crack house before bringing them to the ordinary homes that they actually hope to sell, because the dumps make the ordinary homes seem extraordinary (“Oh, look, honey, no needles on the lawn!”).²⁶ Our side-by-side comparisons can be influenced by extreme possibilities such as extravagant wines and dilapidated houses, but they can also be influenced by the addition of extra possibilities that are identical to those we are already considering. For example, in one study, physicians read about Medication X and were then asked whether they would prescribe the medication for a patient with osteoarthritis.²⁷ The physicians clearly considered the medication worthwhile, because only 28 percent chose not to prescribe it. But when another group of physicians was asked whether they would prescribe Medication X or an equally effective Medication Y for a patient with the same disease, 48 percent chose to prescribe nothing. Apparently, adding another equally effective medication to the list of possibilities made it difficult for the physicians to decide between the two medications, thus leading many of them to recommend neither. If you’ve ever caught yourself saying, “I’m having such a hard time deciding between these two movies that I think I’ll just stay home and watch reruns instead,” then you know why physicians made the mistake they did.²⁸

One of the most insidious things about side-by-side comparison is that it leads us to pay attention to any attribute that distinguishes the possibilities we are comparing.²⁹ I’ve probably spent some of the unhappiest hours of my life in stores that I meant to visit for fifteen minutes. I stop at the mall on the way to the picnic, park the car, dash in, and expect to reemerge a few minutes later with a nifty little digital camera in my pocket. But when I get to Wacky Bob’s Giant Mega Super Really Big World of Cameras, I am confronted by a bewildering panoply of nifty little digital cameras that differ on many attributes. Some of these are attributes that I would have considered even if there had been only one camera in the display case (“This is light enough to fit in my shirt pocket so I can take it anywhere”), and some are attributes I would never have thought about had the differences between cameras not been called to my attention (“The Olympus has flash output compensation, but the Nikon doesn’t. By the way, what *is* flash output compensation?”). Because side-by-side comparisons cause me to consider *all* the attributes on which the cameras differ, I end up considering attributes that I don’t really care about but that just so happen to distinguish one camera from another.³⁰ For example, what attributes would you care about if you were shopping for a new dictionary? In one study, people were given the opportunity to bid on a dictionary that was in perfect condition and that listed ten thousand words, and on average they bid \$24.31 Other people were given the opportunity to bid on a dictionary with a torn cover that listed twenty thousand words, and on average they bid \$20. But when a third group of people was allowed to compare the two dictionaries side by side, they bid \$19 for the small intact dictionary and \$27 for the large torn dictionary. Apparently, people care about the condition of a dictionary’s cover, but they care about the number of words it contains only when that attribute is brought to their attention by side-by-side comparison.

Comparing and Presentism

Now let's step back for a moment and ask what all of these facts about comparison mean for our ability to imagine future feelings. The facts are these: (a) value is determined by the comparison of one thing with another; (b) there is more than one kind of comparison we can make in any given instance; and (c) we may value something more highly when we make one kind of comparison than when we make a different kind of comparison. These facts suggest that if we want to predict how something will make us feel in the future, we *must* consider the kind of comparison we will be making in the future and *not* the kind of comparison we happen to be making in the present. Alas, because we make comparisons without even thinking about them ("Man, that coffee has gotten expensive!" or "I'm not paying double to see this concert"), we rarely consider the fact that the comparisons we are making now may not be the ones we will be making later.³² For example, volunteers in one study were asked to sit at a table and predict how much they would enjoy eating potato chips a few minutes later.³³ Some of the volunteers saw a bag of potato chips and a chocolate bar sitting on the table, and others saw a bag of potato chips and a tin of sardines sitting on the table. Did these extraneous foods influence the volunteers' predictions? You bet they did. Volunteers naturally compared the potato chips with the extraneous food, and they predicted that they'd like eating the potato chips *more* when they compared the chips to the sardines than when they compared the chips to chocolate. But they were wrong. Because when volunteers actually ate the potato chips, the sardine tin and the chocolate bar that were sitting on the table had *no influence whatsoever* on their enjoyment of the chips. After all, when one has a mouthful of crispy, salty, oily, fried potatoes, another food item that just so happens to be sitting there on the table is largely irrelevant—just as the person you *might have* been making love with is largely irrelevant when you are in the middle of making love with someone else. What the volunteers didn't realize was that the comparisons they made as they *imagined* eating a chip ("Sure, chips are okay... but chocolate is so much better") were not the comparisons they would make when they were actually chowing down on one.

Most of us have had similar experiences. We compare the small, elegant speakers with the huge, boxy speakers, notice the acoustical difference, and buy the hulking leviathans. Alas, the acoustical difference is a difference we never notice again, because when we get the monster speakers home we do not compare their sound to the sound of some speaker we listened to a week earlier at the store, but we do compare their awful boxiness to the rest of our sleek, elegant, and now-spoiled decor. Or we travel to France, meet a couple from our hometown, and instantly become touring buddies because compared with all those French people who hate us when we don't try to speak their language and hate us more when we do, the hometown couple seems exceptionally warm and interesting. We are delighted to have found these new friends, and we expect to like them just as much in the future as we do today. But when we have them over for dinner a month after returning home, we are surprised to find that our new friends are rather boring and remote compared with our regular friends, and that we actually dislike them enough to qualify for French citizenship. Our mistake was not in touring Paris with a couple of dull homies but in failing to realize that the comparison we were making in the present ("Lisa and Walter are so much nicer than the waiter at Le Grand Colbert") is not the comparison we would be making in the future ("Lisa and Walter aren't nearly as nice as Toni and Dan"). The same principle explains why we love new things when we buy them and then stop loving them shortly thereafter. When we start shopping for a new pair of sunglasses, we naturally contrast the hip, stylish ones in the store with the old, outdated ones that are sitting on our noses. So we buy the new ones and stick the old ones in a drawer. But after just a few days of wearing our new sunglasses we stop comparing them with the old pair, and—well, what do you know? The delight that the comparison produced evaporates.

The fact that we make different comparisons at different times— but don't realize that we will do so—helps explain some otherwise puzzling conundrums. For instance, economists and psychologists have shown that people expect losing a dollar to have more impact than gaining a dollar, which is why most of us would refuse a bet that gives us an 85 percent chance of doubling our life savings and an 85 percent chance of losing it.³⁴ The likely prospect of a big gain just doesn't compensate for the unlikely

prospect of a big loss because we think losses are more powerful than equal-sized gains. But whether we think of something as a gain or a loss often depends on the comparisons we are making. For example, how much is a 1993 Mazda Miata worth? According to my insurance company, the correct answer this year is about \$2,000. But as the owner of a 1993 Mazda Miata, I can guarantee that if you wanted to buy my sweet little car with all of its adorable dents and mischievous rattles for a mere \$2,000, you'd have to pry the keys out of my cold, dead hands. I also guarantee that if you saw my car, you'd think that for \$2,000 I should not only give you the car and the keys but that I should throw in a bicycle, a lawn mower, and a lifetime subscription to *The Atlantic*. Why would we disagree about the fair value of my car? Because you would be thinking about the transaction as a potential gain ("Compared with how I feel now, how happy will I be if I get this car?")³⁵ and I would be thinking about it as a potential loss ("Compared with how I feel now, how happy will I be if I lose this car?").³⁵ I would want to be compensated for what I expected to be a powerful loss, but you would not want to compensate me because you would be expecting a less powerful gain. What you would be failing to realize is that once you owned my car, your frame of reference would shift, you would be making the same comparison that I am now making, and that the car would be worth every penny you paid for it. What I would be failing to realize is that once I didn't own the car, my frame of reference would shift, I would be making the same comparison that you're making now, and that I'd be delighted with the deal because, after all, I'd never pay \$2,000 for a car that was identical to the one I just sold you. The reason why we disagree on the price and quietly question each other's integrity and parenthood is that neither of us realizes that the kinds of comparisons we are naturally making as buyers and sellers are not the kinds of comparisons we will naturally make once we become owners and former owners.³⁶ In short, the comparisons we make have a profound impact on our feelings, and when we fail to recognize that the comparisons we are making today are not the comparisons we will make tomorrow, we predictably underestimate how differently we will feel in the future.

Onward

Historians use the word presentism to describe the tendency to judge historical figures by contemporary standards. As much as we all despise racism and sexism, these isms have only recently been considered moral turpitudes, and thus condemning Thomas Jefferson for keeping slaves or Sigmund Freud for patronizing women is a bit like arresting someone today for having driven without a seat belt in 1923. And yet, the temptation to view the past through the lens of the present is nothing short of overwhelming. As the president of the American Historical Association noted, "Presentism admits of no ready solution; it turns out to be very difficult to exit from modernity."³⁷ The good news is that most of us aren't historians and thus we don't have to worry about finding that particular exit. The bad news is that all of us are futurians, and presentism is an even bigger problem when people look forward rather than backward. Because predictions about the future are made *in* the present, they are inevitably influenced *by* the present. The way we feel right now ("I'm so hungry") and the way we think right now ("The big speakers sound better than the little ones") exert an unusually strong influence on the way we think we'll feel later. Because time is such a slippery concept, we tend to imagine the future as the present with a twist, thus our imagined tomorrows inevitably look like slightly twisted versions of today. The reality of the moment is so palpable and powerful that it holds imagination in a tight orbit from which it never fully escapes. Presentism occurs because we fail to recognize that our future selves won't see the world the way we see it now. As we are about to learn, this fundamental inability to take the perspective of the person to whom the rest of our lives will happen is the most insidious problem a futurian can face.

Chapter 11

Reporting Live from Tomorrow

Instructed by the antiquary times, He must, he is, he cannot but be wise.
--Shakespeare, *Troilus and Cressida*

In Alfred Hitchcock's 1956 remake of *The Man Who Knew Too Much*, Doris Day sang a waltz whose final verse went like this:

When I was just a child in school,
I asked my teacher, "What will I try?
Should I paint pictures, should I sing songs?"
This was her wise reply:
"Que sera, sera. Whatever will be, will be.
The future's not ours to see. Que sera, sera."¹

Now, I don't mean to quibble with the lyricist, and I have nothing but fond memories of Doris Day, but the fact is that this is *not* a particularly wise reply. When a child asks for advice about which of two activities to pursue, a teacher should be able to provide more than a musical cliché. Yes, *of course* the future is hard to see. But we're all heading that way anyhow, and as difficult as it may be to envision, we have to make *some* decisions about which futures to aim for and which to avoid. If we are prone to mistakes when we try to imagine the future, then how *should* we decide what to do?

Even a child knows the answer to that one: We should ask the teacher. One of the benefits of being a social and linguistic animal is that we can capitalize on the experience of others rather than trying to figure everything out for ourselves. For millions of years, human beings have conquered their ignorance by dividing the labor of discovery and then communicating their discoveries to one another, which is why the average newspaper boy in Pittsburgh knows more about the universe than did Galileo, Aristotle, Leonardo, or any of those other guys who were so smart they only needed one name. We all make ample use of this resource. If you were to write down everything you know and then go back through the list and make a check mark next to the things you know only because somebody told you, you'd develop a repetitive-motion disorder because almost *everything* you know is secondhand. Was Yury Gagarin the first man in space? Is *croissant* a French word? Are there more Chinese than North Dakotans? Does a stitch in time save nine? Most of us know the answers to these questions despite the fact that none of us actually witnessed the launching of *Vostok I*, personally supervised the evolution of language, hand-counted all the people in Beijing and Bismarck, or performed a fully randomized double-blind study of stitching. We know the answers because someone shared them with us. Communication is a kind of "vicarious observation"² that allows us to learn about the world without ever leaving the comfort of our Barcaloungers. The six billion interconnected people who cover the surface of our planet constitute a leviathan with twelve billion eyes, and anything that is seen by one pair of eyes can potentially be known to the entire beast in a matter of months, days, or even minutes.

The fact that we can communicate with one another about our experiences should provide a simple solution to the core problem with which this book has been concerned. Yes, our ability to imagine our future emotions is flawed—but that's okay, because we don't have to imagine what it would feel like to marry a lawyer, move to Texas, or eat a snail when there are so many people who have *done* these things and are all too happy to tell us about them. Teachers, neighbors, coworkers, parents, friends, lovers, children, uncles, cousins, coaches, cabdrivers, bartenders, hairstylists, dentists, advertisers—each of these folks has something to say about what it would be like to live in this future rather than that one, and at any point in time we can be fairly sure that one of these folks has actually *had* the experience that we are merely contemplating. Because we are the mammal that shows and tells, each of us has access to information about almost any experience we can possibly imagine—and many that we can't. Guidance counselors tell us about the best careers, critics tell us about the best restaurants, travel agents tell us about the best vacations, and friends tell us about the best travel agents. Every one of us is surrounded

by a platoon of Dear Abbys who can recount their own experiences and in so doing tell us which futures are most worth wanting.

Given the overabundance of consultants, role models, gurus, mentors, yentas, and nosy relatives, we might expect people to do quite well when it comes to making life's most important decisions, such as where to live, where to work, and whom to marry. And yet, the average American moves more than six times,³ changes jobs more than ten times,⁴ and marries more than once,⁵ which suggests that most of us are making more than a few poor choices. If humanity is a living library of information about what it feels like to do just about anything that can be done, then why do the people with the library cards make so many bad decisions? There are just two possibilities. The first is that a lot of the advice we receive from others is bad advice that we foolishly accept. The second is that a lot of the advice we receive from others is good advice that we foolishly reject. So which is it? Do we listen too well when others speak, or do we not listen well enough? As we shall see, the answer to that question is yes.

Super-replicators

The philosopher Bertrand Russell once claimed that believing is “the most mental thing we do.”⁶ Perhaps, but it is also the most social thing we do. Just as we pass along our genes in an effort to create people whose faces look like ours, so too do we pass along our beliefs in an effort to create people whose minds think like ours. Almost any time we tell anyone anything, we are attempting to change the way their brains operate—attempting to change the way they see the world so that their view of it more closely resembles our own. Just about every assertion—from the sublime (“God has a plan for you”) to the mundane (“Turn left at the light, go two miles, and you’ll see the Dunkin’ Donuts on your right”)—is meant to bring the listener’s beliefs about the world into harmony with the speaker’s. Sometimes these attempts succeed and sometimes they fail. So what determines whether a belief will be successfully transmitted from one mind to another?

The principles that explain why some genes are transmitted more successfully than others also explain why some beliefs are transmitted more successfully than others.⁷ Evolutionary biology teaches us that any gene that promotes its own “means of transmission” will be represented in increasing proportions in the population over time. For instance, imagine that a single gene were responsible for the complex development of the neural circuitry that makes orgasms feel so good. For a person having this gene, orgasms would feel...well, orgasmic. For a person lacking this gene, orgasms would feel more like sneezes—brief, noisy, physical convulsions that pay rather paltry hedonic dividends. Now, if we took fifty healthy, fertile people who had the gene and fifty healthy, fertile people who didn’t, and left them on a hospitable planet for a million years or so, when we returned we would probably find a population of thousands or millions of people, almost all of whom had the gene. Why? Because a gene that made orgasms feel good would tend to be transmitted from generation to generation simply because people who enjoy orgasms are inclined to do the thing that transmits their genes. The logic is so circular that it is virtually inescapable: Genes tend to be transmitted when they make us do the things that transmit genes. What’s more, even *bad* genes—those that make us prone to cancer or heart disease—can become super-replicators if they compensate for these costs by promoting their own means of transmission. For instance, if the gene that made orgasms feel delicious also left us prone to arthritis and tooth decay, that gene might still be represented in increasing proportions because arthritic, toothless people who love orgasms are more likely to have children than are limber, toothy people who do not.

The same logic can explain the transmission of beliefs. If a particular belief has some property that facilitates its own transmission, then that belief tends to be held by an increasing number of minds. As it turns out, there are several such properties that increase a belief’s transmissional success, the most obvious of which is accuracy. When someone tells us where to find a parking space downtown or how to bake a cake at high altitude, we adopt that belief and pass it along because it helps us and our friends do the things we want to do, such as parking and baking. As one philosopher noted, “The faculty of communication would not gain ground in evolution unless it was by and large the faculty of transmitting true beliefs.”⁸ Accurate beliefs give us power which makes it easy to understand why they are so readily

transmitted from one mind to another.

It is a bit more difficult to understand why *inaccurate* beliefs are so readily transmitted from one mind to another—but they are. False beliefs, like bad genes, can and do become super-replicators, and a thought experiment illustrates how this can happen. Imagine a game that is played by two teams, each of which has a thousand players, each of whom is linked to teammates by a telephone. The object of the game is to get one's team to share as many accurate beliefs as possible. When players receive a message that they believe to be accurate, they call a teammate and pass it along. When they receive a message that they believe to be inaccurate, they don't. At the end of the game, the referee blows a whistle and awards each team a point for every accurate belief that the entire team shares and subtracts one point for every inaccurate belief the entire team shares. Now, consider a contest played one sunny day between a team called the Perfects (whose members always transmit accurate beliefs) and a team called the Imperfects (whose members occasionally transmit an inaccurate belief). We should expect the Perfects to win, right?

Not necessarily. In fact, there are some special circumstances under which the Imperfects will beat their pants off. For example, imagine what would happen if one of the Imperfect players sent the false message "Talking on the phone all day and night will ultimately make you very happy," and imagine that other Imperfect players were gullible enough to believe it and pass it on. This message is inaccurate and thus will cost the Imperfects a point in the end. But it may have the compensatory effect of keeping more of the Imperfects on the telephone for more of the time, thus increasing the total number of accurate messages they transmit. Under the right circumstances, the costs of this inaccurate belief would be outweighed by its benefits, namely, that it led players to behave in ways that increased the odds that they would share other accurate beliefs. The lesson to be learned from this game is that inaccurate beliefs can prevail in the belief-transmission game if they somehow facilitate their own "means of transmission." In this case, the means of transmission is not sex but communication, and thus any belief—even a false belief—that increases communication has a good chance of being transmitted over and over again. False beliefs that happen to promote stable societies tend to propagate because people who hold these beliefs tend to live in stable societies, which provide the means by which false beliefs propagate.

Some of our cultural wisdom about happiness looks suspiciously like a super-replicating false belief. Consider money. If you've ever tried to sell anything, then you probably tried to sell it for as much as you possibly could, and other people probably tried to buy it for as little as they possibly could. All the parties involved in the transaction assumed that they would be better off if they ended up with more money rather than less, and this assumption is the bedrock of our economic behavior. Yet, it has far fewer scientific facts to substantiate it than you might expect. Economists and psychologists have spent decades studying the relation between wealth and happiness, and they have generally concluded that wealth increases human happiness when it lifts people out of abject poverty and into the middle class but that it does little to increase happiness thereafter.⁹ Americans who earn \$50,000 per year are much happier than those who earn \$10,000 per year, but Americans who earn \$5 million per year are not much happier than those who earn \$100,000 per year. People who live in poor nations are much less happy than people who live in moderately wealthy nations, but people who live in moderately wealthy nations are not much less happy than people who live in extremely wealthy nations. Economists explain that wealth has "declining marginal utility," which is a fancy way of saying that it hurts to be hungry, cold, sick, tired, and scared, but once you've bought your way out of these burdens, the rest of your money is an increasingly useless pile of paper.¹⁰

So once we've earned as much money as we can actually enjoy, we quit working and enjoy it, right? Wrong. People in wealthy countries generally work long and hard to earn more money than they can ever derive pleasure from.¹¹ This fact puzzles us less than it should. After all, a rat can be motivated to run through a maze that has a cheesy reward at its end, but once the little guy is all topped up, then even the finest Stilton won't get him off his haunches. Once we've eaten our fill of pancakes, more pancakes

are not rewarding, hence we stop trying to procure and consume them. But not so, it seems, with money. As Adam Smith, the father of modern economics, wrote in 1776: “The desire for food is limited in every man by the narrow capacity of the human stomach; but the desire of the conveniences and ornaments of building, dress, equipage, and household furniture, seems to have no limit or certain boundary.”¹²

If food and money both stop pleasing us once we’ve had enough of them, then why do we continue to stuff our pockets when we would not continue to stuff our faces? Adam Smith had an answer. He began by acknowledging what most of us suspect anyway, which is that the production of wealth is not necessarily a source of personal happiness.

In what constitutes the real happiness of human life, [the poor] are in no respect inferior to those who would seem so much above them. In ease of body and peace of mind, all the different ranks of life are nearly upon a level, and the beggar, who suns himself by the side of the highway, possesses that security which kings are fighting for.¹³

That sounds lovely, but if it’s true, then we’re all in big trouble. If rich kings are no happier than poor beggars, then why should poor beggars stop sunning themselves by the roadside and work to become rich kings? If no one wants to be rich, then we have a significant economic problem, because flourishing economies require that people continually procure and consume one another’s goods and services. Market economies require that we all have an insatiable hunger for *stuff*, and if everyone were content with the stuff they had, then the economy would grind to a halt. But if this is a significant *economic* problem, it is not a significant *personal* problem. The chair of the Federal Reserve may wake up every morning with a desire to do what the economy wants, but most of us get up with a desire to do what we want, which is to say that the fundamental needs of a vibrant economy and the fundamental needs of a happy individual are not necessarily the same. So what motivates people to work hard every day to do things that will satisfy the economy’s needs but not their own? Like so many thinkers, Smith believed that people want just one thing—happiness—hence economies can blossom and grow only if people are deluded into believing that the production of wealth will make them happy.¹⁴ If and only if people hold this false belief will they do enough producing, procuring, and consuming to sustain their economies.

The pleasures of wealth and greatness ...strike the imagination as something grand and beautiful and noble, of which the attainment is well worth all the toil and anxiety which we are so apt to bestow upon it. ...It is this deception which rouses and keeps in continual motion the industry of mankind. It is this which first prompted them to cultivate the ground, to build houses, to found cities and commonwealths, and to invent and improve all the sciences and arts, which ennoble and embellish human life; which have entirely changed the whole face of the globe, have turned the rude forests of nature into agreeable and fertile plains, and made the trackless and barren ocean a new fund of subsistence, and the great high road of communication to the different nations of the earth.¹⁵

In short, the production of wealth does not necessarily make individuals happy, but it does serve the needs of an economy, which serves the needs of a stable society, which serves as a network for the propagation of delusional beliefs about happiness and wealth.

Economies thrive when individuals strive, but because individuals will only strive for their own happiness, it is essential that they mistakenly believe that producing and consuming are routes to personal well-being. Although words such as *delusional* may seem to suggest some sort of shadowy conspiracy orchestrated by a small group of men in dark suits, the belief-transmission game teaches us that the propagation of false beliefs does not require that anyone be *trying* to perpetrate a magnificent fraud on an innocent populace. There is no cabal at the top, no star chamber, no master manipulator whose clever program of indoctrination and propaganda has duped us all into believing that money can buy us love. Rather, this particular false belief is a super-replicator because holding it causes us to engage in the very activities that perpetuate it.¹⁶

The belief-transmission game explains why we believe some things about happiness that simply aren’t true. The joy of money is one example. The joy of children is another that for most of us hits a bit closer to home. Every human culture tells its members that having children will make them happy. When people think about their offspring—either imagining future offspring or thinking about their current ones—they tend to conjure up images of cooing babies smiling from their bassinets, adorable

toddlers running higgledypiggledy across the lawn, handsome boys and gorgeous girls playing trumpets and tubas in the school marching band, successful college students going on to have beautiful weddings, satisfying careers, and flawless grandchildren whose affections can be purchased with candy. Prospective parents know that diapers will need changing, that homework will need doing, and that orthodontists will go to Aruba on their life savings, but by and large, they think quite happily about parenthood, which is why most of them eventually leap into it. When parents look back on parenthood, they remember feeling what those who are looking forward to it expect to feel. Few of us are immune to these cheery contemplations. I have a twenty-nine-year-old son, and I am absolutely convinced that he is and always has been one of the greatest sources of joy in my life, having only recently been eclipsed by my two-year-old granddaughter, who is equally adorable but who has not yet asked me to walk behind her and pretend we're unrelated. When people are asked to identify their sources of joy, they do just what I do: They point to their kids.

Yet if we measure the *actual* satisfaction of people who have children, a very different story emerges. As figure 23 shows, couples generally start out quite happy in their marriages and then become progressively less satisfied over the course of their lives together getting close to their original levels of satisfaction only when their children leave home.¹⁷ Despite what we read in the popular press, the only known symptom of “empty nest syndrome” is increased smiling.¹⁸ Interestingly, this pattern of satisfaction over the life cycle describes women (who are usually the primary caretakers of children) better than men.¹⁹ Careful studies of how women feel as they go about their daily activities show that they are less happy when taking care of their children than when eating, exercising, shopping, napping, or watching television.” Indeed, looking after the kids appears to be only slightly more pleasant than doing housework.

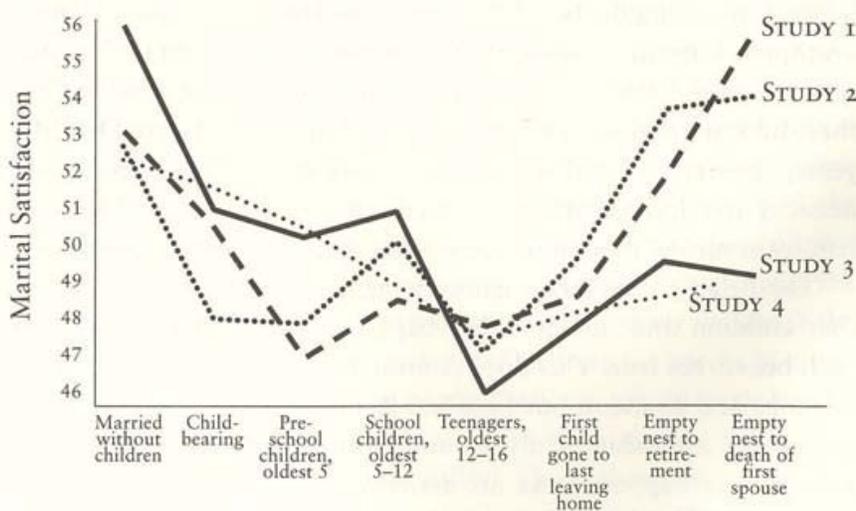


Fig. 23. As the four separate studies in this graph show, marital satisfaction decreases dramatically after the birth of the first child and increases only when the last child leaves home.

None of this should surprise us. Every parent knows that children are a lot of work—a lot of really *hard* work—and although parenting has many rewarding moments, the vast majority of its moments involve dull and selfless service to people who will take decades to become even begrudgingly grateful for what we are doing. If parenting is such difficult business, then why do we have such a rosy view of it? One reason is that we have been talking on the phone all day with society's stockholders—our moms

and uncles and personal trainers—who have been transmitting to us an idea that they believe to be true but whose accuracy is not the cause of its successful transmission. “Children bring happiness” is a super-replicator. The belief-transmission network of which we are a part cannot operate without a continuously replenished supply of people to do the transmitting, thus the belief that children are a source of happiness becomes a part of our cultural wisdom simply because the opposite belief unravels the fabric of any society that holds it. Indeed, people who believed that children bring misery and despair—and who thus stopped having them—would put their belief-transmission network out of

business in around fifty years, hence terminating the belief that terminated them. The Shakers were a utopian farming community that arose in the 1800s and at one time numbered about six thousand. They approved of children, but they did not approve of the natural act that creates them. Over the years, their strict belief in the importance of celibacy caused their network to contract, and today there are just a few elderly Shakers left, transmitting their doomsday belief to no one but themselves.

The belief-transmission game is rigged so that we *must* believe that children and money bring happiness, regardless of whether such beliefs are true. This doesn't mean that we should all now quit our jobs and abandon our families. Rather, it means that while we believe we are raising children and earning paychecks to increase our share of happiness, we are actually doing these things for reasons beyond our ken. We are nodes in a social network that arises and falls by a logic of its own, which is why we continue to toil, continue to mate, and continue to be surprised when we do not experience all the joy we so gullibly anticipated.

The Myth of Fingerprints

My friends tell me that I have a tendency to point out problems without offering solutions, but they never tell me what I should do about it. In one chapter after another, I've described the ways in which imagination fails to provide us with accurate previews of our emotional futures. I've claimed that when we imagine our futures we tend to fill in, leave out, and take little account of how differently we will think about the future once we actually get there. I've claimed that neither personal experience nor cultural wisdom compensates for imagination's shortcomings. I've so thoroughly marinated you in the foibles, biases, errors, and mistakes of the human mind that you may wonder how anyone ever manages to make toast without buttering their kneecaps. If so, you will be heartened to learn that there is a simple method by which anyone can make strikingly accurate predictions about how they will feel in the future. But you may be disheartened to learn that, by and large, no one wants to use it.

Why do we rely on our imaginations in the first place? Imagination is the poor man's wormhole. We can't do what we'd really *like* to do—namely, travel through time, pay a visit to our future selves, and see how happy those selves are—and so we imagine the future instead of actually going there. But if we cannot travel in the dimension of time, we can travel in the dimensions of space, and the chances are pretty good that somewhere in those other three dimensions there is another human being who is actually experiencing the future event that we are merely thinking about. Surely we aren't the first people ever to consider a move to Cincinnati, a career in motel management, another helping of rhubarb pie, or an extramarital affair, and for the most part, those who have already tried these things are more than willing to tell us about them. It is true that when people tell us about their past experiences (“That ice water wasn't really so cold” or “I love taking care of my daughter”), memory's peccadilloes may render their testimony unreliable. But it is also true that when people tell us about their *current* experiences (“How am I feeling right now? I feel like pulling my arm out of this freezing bucket and sticking my teenager's head in it instead!”), they are providing us with the kind of report about their subjective state that is considered the gold standard of happiness measures. If you believe (as I do) that people can generally say how they are feeling at the moment they are asked, then one way to make predictions about our own emotional futures is to find someone who is having the experience we are contemplating and ask them how they feel. Instead of remembering our past experience in order to simulate our future experience, perhaps we should simply ask other people to introspect on their inner states. Perhaps we should give up on remembering and imagining entirely and use other people as surrogates for our future selves.

This idea sounds all too simple, and I suspect you have an objection to it that goes something like this: *Yes, other people are probably right now experiencing the very things I am merely contemplating, but I can't use other people's experiences as proxies for my own because those other people are not me. Every human being is as unique as his or her fingerprints, so it won't help me much to learn about how others feel in the situations that I'm facing. Unless these other people are my clones and have had all the same experiences I've had, their reactions and my reactions are bound to differ. I am a walking,*

talking idiosyncrasy, and thus I am better off basing my predictions on my somewhat fickle imagination than on the reports of people whose preferences, tastes, and emotional proclivities are so radically different from my own. If that's your objection, then it is a good one—so good that it will take two steps to dismantle it. First let me prove to you that the experience of a single randomly selected individual can sometimes provide a better basis for predicting your future experience than your own imagination can. And then let me show you why you—and I—find this so difficult to believe.

Finding the Solution

Imagination has three shortcomings, and if you didn't know that then you may be reading this book backward. If you did know that, then you also know that imagination's first shortcoming is its tendency to fill in and leave out without telling us (which we explored in the section on *realism*). No one can imagine every feature and consequence of a future event, hence we must consider some and fail to consider others. The problem is that the features and consequences we fail to consider are often quite important. You may recall the study in which college students were asked to imagine how they would feel a few days after their school's football team played a game against its archrival." The results showed that students overestimated the duration of the game's emotional impact because when they tried to imagine their future experience, they imagined their team winning ("The clock will hit zero, we'll storm the field, everyone will cheer...") but failed to imagine what they would be doing afterward ("And then I'll go home and study for my final exams"). Because the students were focused on the game, they failed to imagine how events that happened *after* the game would influence their happiness. So what *should* they have done instead?

They should have abandoned imagination altogether. Consider a study that put people in a similar predicament and then forced them to abandon their imaginations. In this study, a group of volunteers (reporters) first received a delicious prize—a gift certificate from a local ice cream parlor—and then performed a long, boring task in which they counted and recorded geometric shapes that appeared on a computer screen.²² The reporters then reported how they felt. Next, a new group of volunteers was told that they would also receive a prize and do the same boring task. Some of these new volunteers (simulators) were told what the prize was and were asked to use their imaginations to predict their future feelings. Other volunteers (surrogators) were not told what the prize was but were instead shown the report of a randomly selected reporter. Not knowing what the prize was, they couldn't possibly use their imaginations to predict their future feelings. Instead, they had to rely on the reporter's report. Once all the volunteers had made their predictions, they received the prize, did the long, boring task, and reported how they actually felt. As the leftmost bars in figure 24 show, simulators were not as happy as they thought they would be. Why? Because they failed to imagine how quickly the joy of receiving a gift certificate would fade when it was followed by a long, boring task. This is precisely the same mistake that the college-football fans made. But now look at the results for the surrogators. As you can see, they made extremely accurate predictions of their future happiness. These surrogators didn't know what kind of prize they would receive, but they did know that someone who had received that prize had been less than ecstatic at the conclusion of the boring task. So they shrugged and reasoned that they too would feel less than ecstatic at the conclusion of the boring task—and they were right!

Imagination's second shortcoming is its tendency to project the present onto the future (which we explored in the section on *presentism*). When imagination paints a picture of the future, many of the details are necessarily missing, and imagination solves this problem by filling in the gaps with details that it borrows from the present. Anyone who has ever shopped on an empty stomach, vowed to quit smoking after stubbing out a cigarette, or proposed marriage while on shore leave knows that how we feel now can erroneously influence how we think we'll feel later. As it turns out, surrogation can remedy this shortcoming too. In one study, volunteers (reporters) ate a few potato chips and reported how much they enjoyed them.²³ Next, a new group of volunteers was fed pretzels, peanut-butter cheese crackers, tortilla chips, bread sticks, and melba toast, which, as you might guess, left them thoroughly stuffed and with little desire for salty snack foods. These stuffed volunteers were then asked to predict how much

they would enjoy eating a particular food the next day. Some of these stuffed volunteers (simulators) were told that the food they would eat the next day was potato chips, and they were asked to use their imaginations to predict how they would feel after eating them. Other stuffed volunteers (surrogators) were not told what the next day's food would be but were instead shown the report of one randomly selected reporter. Because surrogators didn't know what the next day's food would be, they couldn't use their imaginations to predict their future enjoyment of it and thus they had to rely on the reporter's report. Once all the volunteers had made their predictions, they went away, returned the next day, ate some potato chips, and reported how much they enjoyed them. As the middle bars in figure 24 show, simulators enjoyed eating the potato chips more than they thought they would. Why? Because when they made their predictions they had bellies full of pretzels and crackers. But surrogators—who were equally full when they made their predictions—relied on the report of someone without a full belly and hence made much more accurate predictions. It is important to note that the surrogators accurately predicted their future enjoyment of a food despite the fact that they didn't even know what the food was!

Imagination's third shortcoming is its failure to recognize that things will look different once they happen—in particular, that bad things will look a whole lot better (which we explored in the section on *rationalization*). When we imagine losing a job, for instance, we imagine the painful experience (“The boss will march into my office, shut the door behind him....”) without also imagining how our psychological immune systems will transform its meaning (“I’ll come to realize that this was an opportunity to quit retail sales and follow my true calling as a sculptor”). Can surrogation remedy this shortcoming? To find out, researchers arranged for some people to have an unpleasant experience. A group of volunteers (reporters) was told that the experimenter would flip a coin, and if it came up heads, the volunteer would receive a gift certificate to a local pizza parlor. The coin was flipped and—*oh, so sorry*—it came up tails and the reporters received nothing.²⁴ The reporters then reported how they felt. Next, a new group of volunteers was told about the coin-flipping game and was asked to predict how they would feel if the coin came up tails and they didn't get the pizza gift certificate. Some of these volunteers (simulators) were told the precise monetary value of the gift certificate, and others

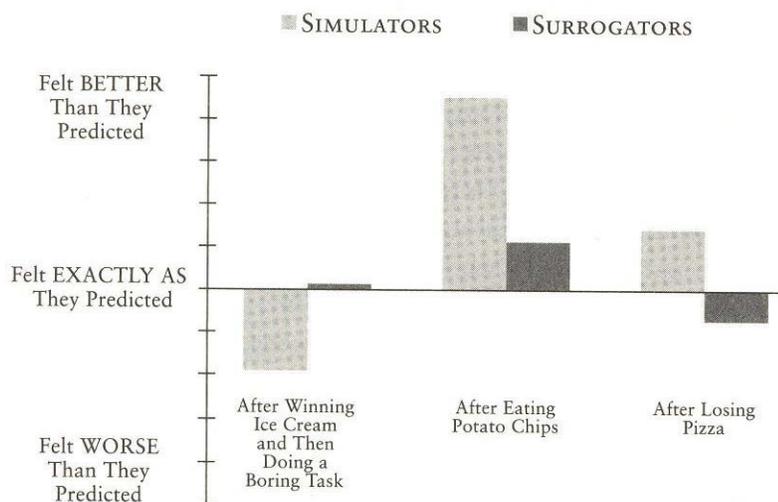


Fig. 24. Volunteers made much more accurate predictions of their future feelings when they learned how someone else had felt in the same situation (surrogators) than when they tried to imagine how they themselves would feel (simulators).

(surrogators) were instead shown the report of one randomly selected reporter. Once the volunteers had made their predictions, the coin was flipped and—*oh, so sorry*—came up tails. The volunteers then reported how they felt. As the rightmost bars in figure 24 show, simulators felt better than they predicted they'd feel if they lost the coin flip. Why? Because simulators did not realize how quickly and easily they would rationalize the loss (“Pizza is too fattening, and besides, I don't like that restaurant anyway”). But surrogators—who had nothing to go on except the report of another randomly selected individual—assumed that they wouldn't feel too bad after losing the prize, hence made more accurate predictions.

Rejecting the Solution

This trio of studies suggests that when people are deprived of the information that imagination

requires and are thus *forced* to use others as surrogates, they make remarkably accurate predictions about their future feelings, which suggests that the best way to predict our feelings tomorrow is to see how others are feeling today.²⁵ Given the impressive power of this simple technique, we should expect people to go out of their way to use it. But they don't. When an entirely new group of volunteers was told about the three situations I just described—winning a prize, eating a mystery food, or failing to receive a gift certificate—and was then asked whether they would prefer to make predictions about their future feelings based on (a) information about the prize, the food, and the certificate; or (b) information about how a randomly selected individual felt after winning them, eating them, or losing them, virtually every volunteer chose the former. If you hadn't seen the results of these studies, you'd probably have done the same. If I offered to pay for your dinner at a restaurant if you could accurately predict how much you were going to enjoy it, would you want to see the restaurant's menu or some randomly selected diner's review? If you are like most people, you would prefer to see the menu, and if you are like most people, you would end up buying your own dinner. Why?

Because if you are like most people, then like most people, you don't know you're like most people. Science has given us a lot of facts about the average person, and one of the most reliable of these facts is that the average person doesn't see herself as average. Most students see themselves as more intelligent than the average student,²⁶ most business managers see themselves as more competent than the average business manager,²⁷ and most football players see themselves as having better "football sense" than their teammates.²⁸ Ninety percent of motorists consider themselves to be safer-than-average drivers,²⁹ and 94 percent of college professors consider themselves to be better-than-average teachers.³⁰ Ironically, the bias toward seeing ourselves as better than average causes us to see ourselves as less biased than average too.³¹ As one research team concluded, "Most of us appear to believe that we are more athletic, intelligent, organized, ethical, logical, interesting, fair-minded, and healthy— not to mention more attractive—than the average person."³²

This tendency to think of ourselves as better than others is not necessarily a manifestation of our unfettered narcissism but may instead be an instance of a more general tendency to think of ourselves as *different* from others—often for better but sometimes for worse. When people are asked about generosity, they claim to perform a greater number of generous acts than others do; but when they are asked about selfishness, they claim to perform a greater number of selfish acts than others do.³³ When people are asked about their ability to perform an easy task, such as driving a car or riding a bike, they rate themselves as better than others; but when they are asked about their ability to perform a difficult task, such as juggling or playing chess, they rate themselves as worse than others.³⁴ We don't always see ourselves as *superior*, but we almost always see ourselves as *unique*. Even when we do precisely what others do, we tend to think that we're doing it for unique reasons. For instance, we tend to attribute other people's choices to features of the chooser ("Phil picked this class because he's one of those literary types"), but we tend to attribute our own choices to features of the options ("But I picked it because it was easier than economics").³⁵ We recognize that our decisions are influenced by social norms ("I was too embarrassed to raise my hand in class even though I was terribly confused"), but fail to recognize that others' decisions were similarly influenced ("No one else raised a hand because no one else was as confused as I was").³⁶ We know that our choices sometimes reflect our aversions ("I voted for Kerry because I couldn't stand Bush"), but we assume that other people's choices reflect their appetites ("If Rebecca voted for Kerry, then she must have liked him").³⁷ The list of differences is long but the conclusion to be drawn from it is short: The self considers itself to be a very special person.³⁸

What makes us think we're so darned special? Three things, at least. First, even if we aren't special, the way we know ourselves is. We are the only people in the world whom we can know from the inside. We *experience* our own thoughts and feelings but must infer that other people are experiencing theirs. We all trust that behind those eyes and inside those skulls, our friends and neighbors are having subjective experiences very much like our own, but that trust is an article of faith and not the palpable, self-evident truth that our own subjective experiences constitute. There is a difference between making

love and reading about it, and it is the same difference that distinguishes our knowledge of our own mental lives from our knowledge of everyone else's. Because we know ourselves and others by such different means, we gather very different kinds and amounts of information. In every waking moment we monitor the steady stream of thoughts and feelings that runs through our heads, but we only monitor other people's words and deeds, and only when they are in our company. One reason why we seem so special, then, is that we learn about ourselves in such a special way.

The second reason is that we *enjoy* thinking of ourselves as special. Most of us want to fit in well with our peers, but we don't want to fit in too well.³⁹ We prize our unique identities, and research shows that when people are made to feel too similar to others, their moods quickly sour and they try to distance and distinguish themselves in a variety of ways.⁴⁰ If you've ever shown up at a party and found someone else wearing exactly the same dress or necktie that you were wearing, then you know how unsettling it is to share the room with an unwanted twin whose presence temporarily diminishes your sense of individuality. Because we value our uniqueness, it isn't surprising that we tend to overestimate it.

The third reason why we tend to overestimate our uniqueness is that we tend to overestimate everyone's uniqueness—that is, we tend to think of people as more different from one another than they actually are. Let's face it: All people are similar in some ways and different in others. The psychologists, biologists, economists, and sociologists who are searching for universal laws of human behavior naturally care about the similarities, but the rest of us care mainly about the differences. Social life involves selecting particular individuals to be our sexual partners, business partners, bowling partners, and more. That task requires that we focus on the things that distinguish one person from another and not on the things that all people share, which is why personal ads are much more likely to mention the advertiser's love of ballet than his love of oxygen. A penchant for respiration explains a great deal about human behavior—for example, why people live on land, become ill at high altitudes, have lungs, resist suffocation, love trees, and so on. It surely explains more than does a person's penchant for ballet. But it does nothing to distinguish one person from another, and thus for ordinary folks who are in the ordinary business of selecting others for commerce, conversation, or copulation, the penchant for air is stunningly irrelevant. Individual similarities are vast, but we don't care much about them because they don't help us do what we are here on earth to do, namely, distinguish Jack from Jill and Jill from Jennifer. As such, these individual similarities are an inconspicuous backdrop against which a small number of relatively minor individual differences stand out in bold relief.

Because we spend so much time searching for, attending to, thinking about, and remembering these differences, we tend to overestimate their magnitude and frequency, and thus end up thinking of people as more varied than they actually are. If you spent all day sorting grapes into different shapes, colors, and kinds, you'd become one of those annoying grapeophiles who talks endlessly about the nuances of flavor and the permutations of texture. You'd come to think of grapes as infinitely varied, and you'd forget that almost all of the really *important* information about a grape can be deduced from the simple fact of its grapehood. Our belief in the variability of others and in the uniqueness of the self is especially powerful when it comes to emotion.⁴¹ Because we can *feel* our own emotions but must *infer* the emotions of others by watching their faces and listening to their voices, we often have the impression that others don't experience the same intensity of emotion that we do, which is why we expect others to recognize our feelings even when we can't recognize theirs.⁴² This sense of emotional uniqueness starts early. When kindergarteners are asked how they and others would feel in a variety of situations, they expect to experience unique emotions ("Billy would be sad but I wouldn't") and they provide unique reasons for experiencing them ("I'd tell myself that the hamster was in heaven, but Billy would just cry").⁴³ When adults make these same kinds of predictions, they do just the same thing.⁴⁴

Our mythical belief in the variability and uniqueness of individuals is the main reason why we refuse to use others as surrogates. After all, surrogation is only useful when we can count on a surrogate to react to an event roughly as we would, and if we believe that people's emotional reactions are more varied than they actually are, then surrogation will seem less useful to us than it actually is. The irony, of

course, is that surrogation is a cheap and effective way to predict one's future emotions, but because we don't realize just how similar we all are, we reject this reliable method and rely instead on our imaginations, as flawed and fallible as they may be.

Onward

Despite its watery connotation, the word *hogwash* refers to the feeding—and not to the bathing—of pigs. Hogwash is something that pigs eat, that pigs like, and that pigs need. Farmers provide pigs with hogwash because without it, pigs get grumpy. The word *hogwash* also refers to the falsehoods people tell one another. Like the hogwash that farmers feed their pigs, the hogwash that our friends and teachers and parents feed us is meant to make us happy; but unlike hogwash of the porcine variety, human hogwash does not always achieve its end. As we have seen, ideas can flourish if they preserve the social systems that allow them to be transmitted. Because individuals don't usually feel that it is their personal duty to preserve social systems, these ideas must disguise themselves as prescriptions for individual happiness. We might expect that after spending some time in the world, our experiences would debunk these ideas, but it doesn't always work that way. To learn from our experience we must remember it, and for a variety of reasons, memory is a faithless friend. Practice and coaching get us out of our diapers and into our britches, but they are not enough to get us out of our presents and into our futures. What's so ironic about this predicament is that the information we need to make accurate predictions of our emotional futures is right under our noses, but we don't seem to recognize its aroma. It doesn't always make sense to heed what people tell us when they communicate their beliefs about happiness, but it does make sense to observe how happy they are in different circumstances. Alas, we think of ourselves as unique entities—minds unlike any others—and thus we often reject the lessons that the emotional experience of others has to teach us.

Notes For Chapter 2

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2. N. Angie; "Joined for Life, and Living Life to the Full," *New York Times*, 23 December 1997, Fr.
3. A. D. Dreger, "The Limits of Individuality: Ritual and Sacrifice in the Lives and Medical Treatment of Conjoined Twins," *Studies in History and Philosophy of Biological and Biomedical Sciences* z~: T—29 (1998).
4. *Ibid.* Since this paper was published, at least one pair of adult conjoined twins sought separation and died during surgery. "A Lost Surgical Gamble," *New York Times*, 9 July 2003, 20.
5. J. R. Searle, *Mind, Language, and Society: Philosophy in the Real World* (New York: Basic Books, 1998).
6. Subjective states can be defined only in terms of their objective antecedents or other subjective states, but the same is true for physical objects. If we were not allowed to define a physical object (Marshmallow Fluf) in terms of the subjective states it brought about ("It's soft, gooey, and sweet") or in terms of any other physical object ("It's made from corn syrup, sugar syrup, vanilla flavoring, and egg whites"), we could not define it. All definitions are achieved by comparing the thing we wish to define with things that inhabit the same ontological category (e.g., physical things to physical things) or by mapping them onto things in a different ontological category (e.g., physical things to subjective states). No one has yet discovered a third way.
7. R. D. Lane et al., "Neuroanatomical Correlates of Pleasant and Unpleasant Emotion," *Neuropsychologia* 35: r437—44 -
8. C. Osgood, G. J. Suci, and P. H. Tannenbaum, *The Measurement of Meaning* (Urbana: University of Illinois Press, 1957). The typical finding is that words differ on three dimensions: evaluation (good or bad); activity (active or passive); and potency (strong or weak). So psychologists talk about a word's E-ness, A-ness, and P-ness. Say these terms aloud and then tell me that scientists have no sense of humor.
9. T. Nagel, "What Is It Like to Be a Bat?" *Philosophical Review* 83: 43 5—50
10. See A. Pope, *Essay on Man*, Epistle 4 (i~z~4), in *The Complete Poetical Works of Alexander Pope*, ed. H. W. Boynton (New York: Houghton Mifflin, 1903).
11. .S. Freud, *Civilization and Its Discontents*, vol. rof *The Standard Edition of the Complete Psychological Works of Sigmund Freud*(1930; London: Hogarth Press and Institute of Psychoanalysis, 1953), 75—76.
12. B. Pascal, "Pensees," in *Pensees*, ed. W.F. Trotter (1660, New York: Dutton, 1908).
13. R. Nozick, *The Examined Life* (New York: Simon & Schuster, 1989), ioz.
14. J. S. Mill, "Utilitarianism" (1863), in *On Liberty, the Subjection of Women and Utilitarianism*, in *The Basic Writings of John Stuart Mill*, ed. D. E. Miller (New York: Modern Library, zooz).
15. R. Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974).
16. Nozick, *The Examined Life*, p. iii. Nozick's "happiness machine" problem is popular among academics, who generally fail to consider three things. First, who says that no one would want to be hooked up? The world is full of people who

- want happiness and don't care one bit about whether it is "well deserved." Second, those who claim that they would not agree to be hooked up may already be hooked up. After all, the deal is that you forget your previous decision. Third, no one can really answer this question because it requires them to imagine a future state in which they do not know the very thing they are currently contemplating. See E. B. Royzman, K. W. Cassidy, and J. Baron, "I Know, You Know': Epistemic Egocentrism in Children and Adults," *Review of General Psychology* 7: 38—65 (2003).
17. D. M. MacMahon, "From the Happiness of Virtue to the Virtue of Happiness: 400 BC—AD 1780," *Daedalus: Journal of the American Academy of Arts and Sciences* 133: 5—17 (2004).
 18. *Ibid.*
 19. For some discussions of the distinction between moral and emotional happiness, all of which take a position contrary to mine, see D. W. Hudson, *Happiness and the Limits of Satisfaction* (London: Rowman & Littlefield, 1996); M. Kingwell, *Better Living: In Pursuit of Happiness from Plato to Prozac* (Toronto: Viking, 1998); and E. Telfer, *Happiness* (New York: St. Martin's Press, 1980).
 20. N. Block, "Begging the Question Against Phenomenal Consciousness," *Behavioral and Brain Sciences* 15: 205—6 (1992).
 21. J. W. Schooler and T. Y. Engstler-Schooler, "Verbal Overshadowing of Visual Memories: Some Things Are Better Left Unsaid," *Cognitive Psychology* 22: 36—71 (1990.)
 22. G. W. McConkie and D. Zola, "Is Visual Information Integrated in Successive Fixations in Reading?," *Perception and Psychophysics* 25: 221—24 (1990).
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 24. M. R. Beck, B. L. Angelone, and D. T. Levin, "Knowledge About the Probability of Change Affects Change Detection Performance," *Journal of Experimental Psychology: Human Perception and Performance* 30: 778—91 (2004).
 25. D. J. Simons and D. T. Levin, "Failure to Detect Changes to People in a Real-World Interaction," *Psychonomic Bulletin and Review* 5~:644—49 (1998).
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 27. "Hats Off to the Amazing Hondo," www.hondomagic.com/html/a_little_magic.htm.
 28. B. Fischhoff, "Perceived Informativeness of Facts," *Journal of Experimental Psychology: Human Perception and Performance* 3: 349-58(1977).
 29. A. Parducci, *Happiness, Pleasure, and Judgment: The Contextual Theory and Its Applications* (Mahwah, N.J.: Lawrence Erlbaum, 1995).
 30. E. Shackleton, *South* (New York: Carroll & Graf, 1998), 192.

Notes For Chapter 3

1. J. LeDoux, *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* (New York: Simon & Schuster, 1996).
2. R. B. Zajonc, "Feeling and Thinking: Preferences Need No Inferences," *American Psychologist* 35: 151—75 (1980); R. B. Zajonc, "On the Primacy of Affect," *American Psychologist* 39: 117—23 (1984); and "Emotions," in *The Handbook of Social Psychology*, ed. D. T. Gilbert, S. T. Fiske, and G. Lindzey, 4th ed., vol. i (New York: McGraw-Hill, 1998), 591—632.
3. S. Schachter and J. Singer, "Cognitive, Social and Physiological Determinants of Emotional State," *Psychological Review* 69: 379—99 (1962).
4. D. G. Dutton and A. P. Aron, "Some Evidence for Heightened Sexual Attraction Under Conditions of High Anxiety," *Journal of Personality and Social Psychology* 47: 10—17 (1974).
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6. G. Greene, *The End of the Affair* (New York: Viking Press, 1951), 29.
7. R. A. Dienstbier and P. C. Munter, "Cheating as a Function of the Labeling of Natural Arousal," *Journal of Personality and Social Psychology* 3: 208—13
8. M. P. Zanna and J. Cooper, "Dissonance and the Pill: An Attribution Approach to Studying the Arousal Properties of Dissonance," *Journal of Personality and Social Psychology* 12: 703—9 (1974).
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11. L. Weiskrantz, *Blindsight* (Oxford: Oxford University Press, 1986).
12. A. Cowey and P. Stoerig, "The Neurobiology of Blindsight," *Trends in Neuroscience* 14: 140—45 (1991).
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 15. The nineteenth-century economist Francis Edgeworth referred to this device as a hedonimeter. See F. Y. Edgeworth, *Mathematical Psychics: An Essay on the Application of Mathematics to the Moral Sciences* (London: Kegan Paul, 1881).
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 18. M. Minsky, *The Society of Mind* (New York: Simon & Schuster, 1985); W. G. Lycan, “Homuncular Functionalism Meets PDP,” in *Philosophy and Connectionist Theory*, ed. W. Ramsey, S. P. Stich, and D. E. Rumelhart (Mahwah, N.J.: Lawrence Erlbaum, 1991), 259—86.
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Notes For Chapter 6

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3. W. Wright, “Speech to the Aero Club of France,” in *The Papers of Wilbur and Orville Wright*, ed. M. McFarland (New York: McGraw-Hill, 1908), 934.
4. A. C. Clarke, *Profiles of the Future* (New York: Bantam, 1963), 14. By the way, Clarke defines “elderly” as somewhere between thirty and forty-five. Yikes!
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7. M. A. Safer, L. J. Levine, and A. L. Drapalski, “Distortion in Memory for Emotions: The Contributions of Personality and Post-Event Knowledge,” *Personality and Social Psychology Bulletin* 28: 1495—1507 (2002).
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11. For reviews, see M. Ross, “Relation of Implicit Theories to the Construction of Personal Histories,” *Psychological Review* 96: 341—57 (1989); L. J. Levine and M. A. Safer, “Sources of Bias in Memory for Emotions,” *Current Directions in Psychological Science* 11: 169—73 (2002).
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14. R. E. Nisbett and D. E. Kanouse, “Obesity, Food Deprivation and Supermarket Shopping Behavior,” *Journal of Personality and Social Psychology* 12: 289—94 (1969); D. Read and B. van Leeuwen, “Predicting Hunger: The Effects of Appetite and Delay on Choice,” *Organizational Behavior and Human Decision Processes* 76: 189—205 (1998).
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 24. Clever psychologists have been able to design some unusual circum stances that provide exceptions to this rule; see C. W. Perky, “An Experimental Study of Imagination,” *American Journal of Psychology* 21: 422—52. (1910). It is also worth noting that while we can almost always distinguish between what we are seeing and what we are imagining, we are not always able to distinguish between what we saw and what we imagined; see M. K. Johnson and C. L. Raye, “Reality Monitoring,” *Psychological Review* 88: 67—85 (1981).
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Notes For Chapter 7

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3. D. Gentner, M. Imai, and L. Boroditsky, “As Time Goes By: Evidence for Two Systems in Processing Space Time Metaphors,” *Language and Cognitive Processes* 17~ 537—65 (2002); and L. Boroditsky, “Metaphoric Structuring: Understanding Time Through Spatial Metaphors,” *Cognition* 75: j—z8 (2000).
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5. L. Boroditsky, “Does Language Shape Thought? Mandarin and English Speakers’ Conceptions of Time,” *Cognitive Psychology* 43: 1—2.2. (2001).
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7. D. Read and G. E. Loewenstein, “Diversification Bias: Explaining the Discrepancy in Variety Seeking Between Combined and Separated Choices,” *Journal of Experimental Psychology: Applied* 1: 34—~ ~ - See also I. Simonson, “The Effect of Purchase Quantity and Timing on Variety-Seeking Behavior,” *Journal of Marketing Research* 12: 150—62(1990).
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11. I would like to take this opportunity to note that while my apparent fixation on adulterous mailmen betrays my juvenile

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18. D. Kahneman and A. Tversky, "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica* 47: 263—9
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Notes For Chapter 11

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