The Happiness Hypothesis

FINDING MODERN TRUTH IN ANCIENT WISDOM

JONATHAN HAIDT

A Member of the Perseus Books Group
New York
2006

and punishment possibilities of a situation; the neurons in this part of the cortex fire wildly when there is an immediate possibility of pleasure or pain, loss or gain.[17] When you feel yourself drawn to a meal, a landscape, or an attractive person, or repelled by a dead animal, a bad song, or a blind date, your orbitofrontal cortex is working hard to give you an emotional feeling of *wanting* to approach or to get away.[18] The orbitofrontal cortex therefore appears to be a better candidate for the id, or for St. Paul's flesh, than for the superego or the Spirit.

The importance of the orbitofrontal cortex for emotion has been further demonstrated by research on brain damage. The neurologist Antonio Damasio has studied people who, because of a stroke, tumor, or blow to the head, have lost various parts of their frontal cortex. In the 1990s, Damasio found that when certain parts of the orbitofrontal cortex are damaged, patients lose most of their emotional lives. They report that when they ought to feel emotion, they feel nothing, and studies of their autonomic reactions (such as those used in lie detector tests) confirm that they lack the normal flashes of bodily reaction that the rest of us experience when observing scenes of horror or beauty. Yet their reasoning and logical abilities are intact. They perform normally on tests of intelligence and knowledge of social rules and moral principles.[19]

So what happens when these people go out into the world? Now that they are free of the distractions of emotion, do they become hyperlogical, able to see through the haze of feelings that blinds the rest of us to the path of perfect rationality? Just the opposite. They find themselves unable to make simple decisions or to set goals, and their lives fall apart. When they look out at the world and think, "What should I do now?" they see dozens of choices but lack immediate internal feelings of like or dislike. They must examine the pros and cons of every choice with their reasoning, but in the absence of feeling they see little reason to pick one or the other. When the rest of us look out at the world, our emotional brains have instantly and automatically appraised the possibilities. One possibility usually jumps out at us as the obvious best one. We need only use reason to weigh the pros and cons when two or three possibilities seem equally good.

Human rationality depends critically on sophisticated emotionality. It is only because our emotional brains works so well that our reasoning can work at all. Plato's image of reason as charioteer controlling the dumb beasts of passion may overstate not only the wisdom but also the power of the charioteer. The metaphor of a rider on an elephant fits Damasio's findings more closely: Reason and emotion must both work together to create intelligent behavior, but emotion (a major part of the elephant) does most of the work. When the neocortex came along, it made the rider possible, but it made the elephant much smarter, too.

Fourth Division: Controlled vs. Automatic

In the 1990s, while I was developing the elephant/rider metaphor for myself, the field of social psychology was coming to a similar view of the mind. After its long infatuation with information processing models and computer metaphors, psychologists began to realize that there are really two processing systems at work in the mind at all times: controlled processes and automatic processes.

Suppose you volunteered to be a subject in the following experiment.[20] First, the experimenter hands you some word problems and tells you to come and get her when you are finished. The word problems are easy: Just unscramble sets of five words and make sentences using four of them. For example, "they her bother see usually" becomes either "they usually see her" or "they usually bother her." A few minutes later, when you have finished the test, you go out to the hallway as instructed. The experimenter is there, but she's engaged in a conversation with someone and isn't making eye contact with you. What do you suppose you'll do? Well, if half the sentences you unscrambled contained words related to rudeness (such as bother, brazen, aggressively), you will probably interrupt the experimenter within a minute or two to say, "Hey, I'm finished. What should I do now?" But if you unscrambled sentences in which the rude words were swapped with words related to politeness ("they her *respect* see usually"), the odds

are you'll just sit there meekly and wait until the experimenter acknowledges you—ten minutes from now.

Likewise, exposure to words related to the elderly makes people walk more slowly; words related to professors make people smarter at the game of Trivial Pursuit; and words related to soccer hooligans make people dumber.[21] And these effects don't even depend on your consciously reading the words; the same effects can occur when the words are presented subliminally, that is, flashed on a screen for just a few hundredths of a second, too fast for your conscious mind to register them. But some part of the mind does see the words, and it sets in motion behaviors that psychologists can measure.

According to John Bargh, the pioneer in this research, these experiments show that most mental processes happen automatically, without the need for conscious attention or control. Most automatic processes are completely unconscious, although some of them show a part of themselves to consciousness; for example, we are aware of the "stream of consciousness"[22] that seems to flow on by, following its own rules of association, without any feeling of effort or direction from the self. Bargh contrasts automatic processes with controlled processes, the kind of thinking that takes some effort, that proceeds in steps and that always plays out on the center stage of consciousness. For example, at what time would you need to leave your house to catch a 6:26 flight to London? That's something you have to think about consciously, first choosing a means of transport to the airport and then considering rush-hour traffic, weather, and the strictness of the shoe police at the airport. You can't depart on a hunch. But if you drive to the airport, almost everything you do on the way will be automatic: breathing, blinking, shifting in your seat, daydreaming, keeping enough distance between you and the car in front of you, even scowling and cursing slower drivers.

Controlled processing is limited—we can think consciously about one thing at a time only—but automatic processes run in parallel and can handle many tasks at once. If the mind performs hundreds of operations each second, all but one of them must be handled automatically. So what is the relationship between controlled and automatic processing? Is controlled processing the wise boss, king, or CEO handling the most impor-

tant questions and setting policy with foresight for the dumber automatic processes to carry out? No, that would bring us right back to the Promethean script and divine reason. To dispel the Promethean script once and for all, it will help to go back in time and look at why we have these two processes, why we have a small rider and a large elephant.

When the first clumps of neurons were forming the first brains more than 600 million years ago, these clumps must have conferred some advantage on the organisms that had them because brains have proliferated ever since. Brains are adaptive because they integrate information from various parts of the animal's body to respond quickly and automatically to threats and opportunities in the environment. By the time we reach 3 million years ago, the Earth was full of animals with extraordinarily sophisticated automatic abilities, among them birds that could navigate by star positions, ants that could cooperate to fight wars and run fungus farms, and several species of hominids that had begun to make tools. Many of these creatures possessed systems of communication, but none of them had developed language.

Controlled processing requires language. You can have bits and pieces of thought through images, but to plan something complex, to weigh the pros and cons of different paths, or to analyze the causes of past successes and failures, you need words. Nobody knows how long ago human beings developed language, but most estimates range from around 2 million years ago, when hominid brains became much bigger, to as recently as 40,000 years ago, the time of cave paintings and other artifacts that reveal unmistakably modern human minds.[23] Whichever end of that range you favor, language, reasoning, and conscious planning arrived in the most recent eye-blink of evolution. They are like new software, Rider version 1.0. The language parts work well, but there are still a lot of bugs in the reasoning and planning programs.[24] Automatic processes, on the other hand, have been through thousands of product cycles and are nearly perfect. This difference in maturity between automatic and controlled processes helps explain why we have inexpensive computers that can solve logic, math, and chess problems better than any human beings can (most of us struggle with these tasks), but none of our robots, no matter how costly, can walk through the woods as well as the average six-year-old child (our perceptual and motor systems are superb).

Evolution never looks ahead. It can't plan the best way to travel from point A to point B. Instead, small changes to existing forms arise (by genetic mutation), and spread within a population to the extent that they help organisms respond more effectively to current conditions. When language evolved, the human brain was not reengineered to hand over the reins of power to the rider (conscious verbal thinking). Things were already working pretty well, and linguistic ability spread to the extent that it helped the elephant do something important in a better way. *The rider evolved to serve to the elephant.* But whatever its origin, once we had it, language was a powerful tool that could be used in new ways, and evolution then selected those individuals who got the best use out of it.

One use of language is that it partially freed humans from "stimulus control." Behaviorists such as B. F. Skinner were able to explain much of the behavior of animals as a set of connections between stimuli and responses. Some of these connections are innate, such as when the sight or smell of an animal's natural food triggers hunger and eating. Other connections are learned, as demonstrated by Ivan Pavlov's dogs, who salivated at the sound of a bell that had earlier announced the arrival of food. The behaviorists saw animals as slaves to their environments and learning histories who blindly respond to the reward properties of whatever they encounter. The behaviorists thought that people were no different from other animals. In this view, St. Paul's lament could be restated as: "My flesh is under stimulus control." It is no accident that we find the carnal pleasures so rewarding. Our brains, like rat brains, are wired so that food and sex give us little bursts of dopamine, the neurotransmitter that is the brain's way of making us enjoy the activities that are good for the survival of our genes.[25] Plato's "bad" horse plays an important role in pulling us toward these things, which helped our ancestors survive and succeed in becoming our ancestors.

But the behaviorists were not exactly right about people. The controlled system allows people to think about long-term goals and thereby escape the tyranny of the here-and-now, the automatic triggering of temptation by the sight of tempting objects. People can imagine alternatives that are not visually present; they can weigh long-term health risks against present pleasures, and they can learn in conversation about which choices will bring success

and prestige. Unfortunately, the behaviorists were not entirely wrong about people, either. For although the controlled system does not conform to behaviorist principles, it also has relatively little power to cause behavior. The automatic system was shaped by natural selection to trigger quick and reliable action, and it includes parts of the brain that make us feel pleasure and pain (such as the orbitofrontal cortex) and that trigger survival-related motivations (such as the hypothalamus). The automatic system has its finger on the dopamine release button. The controlled system, in contrast, is better seen as an advisor. It's a rider placed on the elephant's back to help the elephant make better choices. The rider can see farther into the future, and the rider can learn valuable information by talking to other riders or by reading maps, but the rider cannot order the elephant around against its will. I believe the Scottish philosopher David Hume was closer to the truth than was Plato when he said, "Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them."[26]

In sum, the rider is an advisor or servant; not a king, president, or charioteer with a firm grip on the reins. The rider is Gazzaniga's interpreter module; it is conscious, controlled thought. The elephant, in contrast, is everything else. The elephant includes the gut feelings, visceral reactions, emotions, and intuitions that comprise much of the automatic system. The elephant and the rider each have their own intelligence, and when they work together well they enable the unique brilliance of human beings. But they don't always work together well. Here are three quirks of daily life that illustrate the sometimes complex relationship between the rider and the elephant.

Failures of Self Control

Imagine that it is 1970 and you are a four-year-old child in an experiment being conducted by Walter Mischel at Stanford University. You are brought into a room at your preschool where a nice man gives you toys and plays with you for a while. Then the man asks you, first, whether you like marshmallows (you do), and, then, whether you'd rather have this plate here with one marshmallow or that plate there with two marshmallows (that one, of

course). Then the man tells you that he has to go out of the room for a little while, and if you can wait until he comes back, you can have the two marshmallows. If you don't want to wait, you can ring this bell here, and he'll come right back and give you the plate with one; but if you do that, you can't have the two. The man leaves. You stare at the marshmallows. You salivate. You want. You fight your wanting. If you are like most four-year-olds, you can hold out for only a few minutes. Then you ring the bell.

Now let's jump ahead to 1985. Mischel has mailed your parents a questionnaire asking them to report on your personality, your ability to delay gratification and deal with frustration, and your performance on your college entrance exams (the Scholastic Aptitude Test). Your parents return the questionnaire. Mischel discovers that the number of seconds you waited to ring the bell in 1970 predicts not only what your parents say about you as a teenager but also the likelihood that you were admitted to a top university. Children who were able to overcome stimulus control and delay gratification for a few extra minutes in 1970 were better able to resist temptation as teenagers, to focus on their studies, and to control themselves when things didn't go the way they wanted.[27]

What was their secret? A large part of it was strategy—the ways that children used their limited mental control to shift attention. In later studies, Mischel discovered that the successful children were those who looked away from the temptation or were able to think about other enjoyable activities.[28] These thinking skills are an aspect of emotional intelligence—an ability to understand and regulate one's own feelings and desires.[29] An emotionally intelligent person has a skilled rider who knows how to distract and coax the elephant without having to engage in a direct contest of wills.

It's hard for the controlled system to beat the automatic system by willpower alone; like a tired muscle,[30] the former soon wears down and caves in, but the latter runs automatically, effortlessly, and endlessly. Once you understand the power of stimulus control, you can use it to your advantage by changing the stimuli in your environment and avoiding undesirable ones; or, if that's not possible, by filling your consciousness with thoughts about their less tempting aspects. Buddhism, for example, in an effort to break people's carnal attachment to their own (and others') flesh, developed methods of meditating on decaying corpses.[31] By choosing to

Goals once set are monitored by automatic processing. Making goals to not do something

stare at something that revolts the automatic system, the rider can begin to change what the elephant will want in the future.

Mental Intrusions

Edgar Allan Poe understood the divided mind. In *The Imp of the Perverse,* Poe's protagonist carries out the perfect murder, inherits the dead man's estate, and lives for years in healthy enjoyment of his ill-gotten gains. Whenever thoughts of the murder appear on the fringes of his consciousness, he murmurs to himself, "I am safe." All is well until the day he remodels his mantra to "I am safe—yes—if I be not fool enough to make open confession." With that thought, he comes undone. He tries to suppress the thought of confessing, but the harder he tries, the more insistent the thought becomes. He panics, he starts running, people start chasing him, he blacks out, and, when he returns to his senses, he is told that he has made a full confession.

I love this story, for its title above all else. Whenever I am on a cliff, a rooftop, or a high balcony, the imp of the perverse whispers in my ear, "Jump." It's not a command, it's just a word that pops into my consciousness. When I'm at a dinner party sitting next to someone I respect, the imp works hard to suggest the most inappropriate things I could possibly say. Who or what is the imp? Dan Wegner, one of the most perverse and creative social psychologists, has dragged the imp into the lab and made it confess to being an aspect of automatic processing.

In Wegner's studies, participants are asked to try hard *not* to think about something, such as a white bear, or food, or a stereotype. This is hard to do. More important, the moment one stops trying to suppress a thought, the thought comes flooding in and becomes even harder to banish. In other words, Wegner creates minor obsessions in his lab by instructing people not to obsess. Wegner explains this effect as an "ironic process" of mental control.[32] When controlled processing tries to influence thought ("Don't think about a white bear!"), it sets up an explicit goal. And whenever one pursues a goal, a part of the mind automatically monitors progress, so that it can order corrections or know when success has been achieved. When that goal is an action in the world (such as arriving at the airport on time), this feedback

why do they tire quickly?

system works well. But when the goal is mental, it backfires. Automatic processes continually check: "Am I not thinking about a white bear?" As the act of monitoring for the absence of the thought introduces the thought, the person must try even harder to divert consciousness. Automatic and controlled processes end up working at cross purposes, firing each other up to ever greater exertions. But because controlled processes tire quickly, eventually the inexhaustible automatic processes run unopposed, conjuring up herds of white bears. Thus, the attempt to remove an unpleasant thought can guarantee it a place on your frequent-play list of mental ruminations.

Now, back to me at that dinner party. My simple thought "don't make a fool of yourself" triggers automatic processes looking for signs of foolishness. I know that it would be stupid to comment on that mole on his forehead, or to say "I love you," or to scream obscenities. And up in consciousness, I become aware of three thoughts: comment on the mole, say "I love you," or scream obscenities. These are not commands, just ideas that pop into my head. Freud based much of his theory of psychoanalysis on such mental intrusions and free associations, and he found they often have sexual or aggressive content. But Wegner's research offers a simpler and more innocent explanation: Automatic processes generate thousands of thoughts and images every day, often through random association. The ones that get stuck are the ones that particularly shock us, the ones we try to suppress or deny. The reason we suppress them is not that we know, deep down, that they're true (although some may be), but that they are scary or shameful. Yet once we have tried and failed to suppress them, they can become the sorts of obsessive thoughts that make us believe in Freudian notions of a dark and evil unconscious mind.

THE DIFFICULTY OF WINNING AN ARGUMENT

Consider the following story:

> Julie and Mark are sister and brother. They are traveling together in France on summer vacation from college. One night they are staying alone in a cabin near the beach. They decide that it would be interesting

and fun if they tried making love. At the very least, it would be a new experience for each of them. Julie is already taking birth control pills, but Mark uses a condom, too, just to be safe. They both enjoy making love, but decide not to do it again. They keep that night as a special secret, which makes them feel even closer to each other.

Do you think it is acceptable for two consenting adults, who happen to be siblings, to make love? If you are like most people in my studies,[33] you immediately answered no. But how would you justify that judgment? People often reach first for the argument that incestuous sex leads to offspring that suffer genetic abnormalities. When I point out that the siblings used two forms of birth control, however, no one says, "Oh, well, in that case it's okay." Instead, people begin searching for other arguments, for example, "It's going to harm their relationship." When I respond that in this case the sex has made the relationship stronger, people just scratch their heads, frown, and say, "I know it's wrong, I'm just having a hard time explaining why."

The point of these studies is that moral judgment is like aesthetic judgment. When you see a painting, you usually know instantly and automatically whether you like it. If someone asks you to explain your judgment, you confabulate. You don't really know why you think something is beautiful, but your interpreter module (the rider) is skilled at making up reasons, as Gazzaniga found in his split-brain studies. You search for a plausible reason for liking the painting, and you latch on to the first reason that makes sense (maybe something vague about color, or light, or the reflection of the painter in the clown's shiny nose). Moral arguments are much the same: Two people feel strongly about an issue, their feelings come first, and their reasons are invented on the fly, to throw at each other. When you refute a person's argument, does she generally change her mind and agree with you? Of course not, because the argument you defeated was not the cause of her position; it was made up after the judgment was already made.

If you listen closely to moral arguments, you can sometimes hear something surprising: that it is really the elephant holding the reins, guiding the rider. It is the elephant who decides what is good or bad, beautiful or ugly. Gut feelings, intuitions, and snap judgments happen constantly and

automatically (as Malcolm Gladwell described in *Blink*),[34] but only the rider can string sentences together and create arguments to give to other people. In moral arguments, the rider goes beyond being just an advisor to the elephant; he becomes a lawyer, fighting in the court of public opinion to persuade others of the elephant's point of view.

This, then, is our situation, lamented by St. Paul, Buddha, Ovid, and so many others. Our minds are loose confederations of parts, but we identify with and pay too much attention to one part: conscious verbal thinking. We are like the proverbial drunken man looking for his car keys under the street light. ("Did you drop them here?" asks the cop. "No" says the man, "I dropped them back there in the alley, but the light is better over here.") Because we can see only one little corner of the mind's vast operation, we are surprised when urges, wishes, and temptations emerge, seemingly from nowhere. We make pronouncements, vows, and resolutions, and then are surprised by our own powerlessness to carry them out. We sometimes fall into the view that we are fighting with our unconscious, our id, or our animal self. But really we are the whole thing. We are the rider, and we are the elephant. Both have their strengths and special skills. The rest of this book is about how complex and partly clueless creatures such as ourselves can get along with each other (chapters 3 and 4), find happiness (chapters 5 and 6), grow psychologically and morally (chapters 7 and 8), and find purpose and meaning in our lives (chapters 9 and 10). But first we have to figure out why the elephant is such a pessimist.