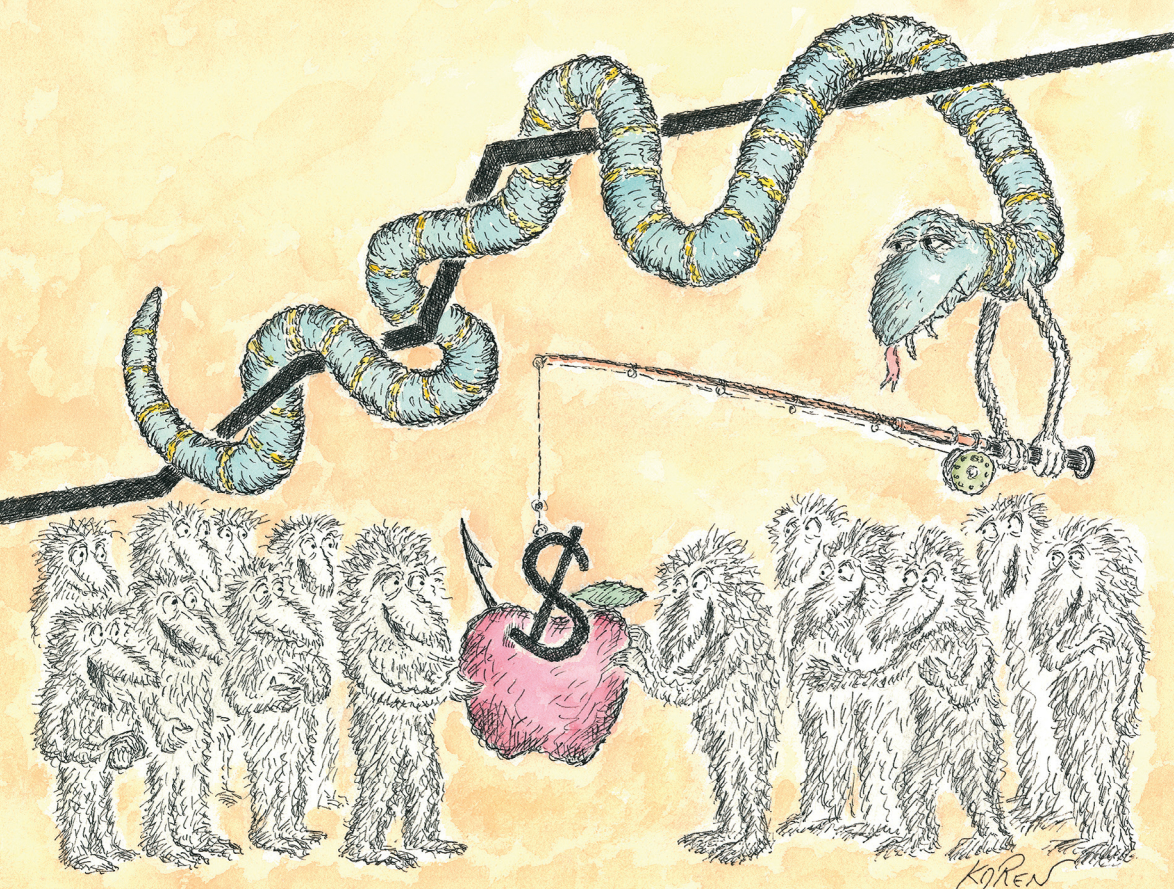


PHISHING FOR PHOOLS

The ECONOMICS of
MANIPULATION & DECEPTION



GEORGE A. AKERLOF
and
ROBERT J. SHILLER

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*Expect to Be Manipulated:
Phishing Equilibrium*

The psychologists have taught us over the course of more than a century—in voices ranging in style and content from Sigmund Freud to Daniel Kahneman—that people frequently make decisions that are not in their best interest. Put bluntly, they do not do what is really good for them; they do not choose what they really want. Such bad decisions make it possible for them to be phished for phools. This truth is so basic that it is critical to the first story of the Bible, where the serpent beguiles innocent Eve to make a phoolish decision that she will instantly, and forever, regret.¹

The fundamental concept of economics is quite different: it is the notion of market equilibrium.² For our explanation, we adapt the example of the checkout lane at the supermarket.³ When we arrive at the checkout at the supermarket, it usually takes at least a moment to decide which line to choose. This decision entails some difficulty because the lines are—as an equilibrium—of almost the same length. This equilibrium occurs for the simple and natural reason that the arrivals at checkout are sequentially choosing the shortest line.

The principle of equilibrium, which we see in the checkout lanes, applies to the economy much more generally. As businesspeople choose what line of business to undertake—as well as where they expand, or contract, their existing business—they (like customers approaching checkout) pick off the best opportunities. This too creates an equilibrium. Any opportunities for unusual profits are quickly taken off the table, leading to a situation where such opportunities are hard to find. This principle, with the concept of equilibrium it entails, lies at the heart of economics.

The principle also applies to phishing for phools. That means that if we have some weakness or other—some way in which we can be

phished for phools for more than the usual profit—in the phishing equilibrium someone will take advantage of it. Among all those business persons figuratively arriving at the checkout counter, looking around, and deciding where to spend their investment dollars, some will look to see if there are unusual profits from phishing us for phools. And if they see such an opportunity for profits, that will (again figuratively) be the “checkout lane” they choose.

And economies will have a phishing equilibrium in which every chance for profit more than the ordinary will be taken up. To practice our understanding, we will now turn to three “finger exercises” in the application of the concept of phishing equilibria.

Finger Exercise One: Cinnabon®

Consider an example of what we are driving at. Back in 1985, father and son Rich and Greg Komen of Seattle founded Cinnabon® Inc. with a marketing strategy. They would open outlets that baked on their premises the “world’s best cinnamon roll.”⁴ Cinnamon’s smell is an attraction to customers as a pheromone is for moths. The story is told how “numerous trips to Indonesia” were made “to acquire fine Makara cinnamon.”⁵ A Cinnabon® is made with margarine; it has 880 calories; and it is slathered with frosting. “Life Needs Frosting®” is the Cinnabon® Inc. motto. They carefully placed the outlets, with placards and mottos, in the track of people who would be vulnerable to that smell and to the story of the best cinnamon roll, with a little time on their hands in airports and shopping malls. Of course, the information about calories is there, but it isn’t easy to find. Cinnabon® has been an explosive success, reflecting not only the delicious bun but also the Komens’ strategy, replicated again and again. There are now more than 750 Cinnabon® bakeries in more than thirty countries.⁶ Most of us probably take it for granted that there just happens to be such an outlet right where we are waiting for our delayed flight. We fail to appreciate how much effort and expertise went into understanding our weak moments and developing a strategy to take advantage of them.

Nor do most of us think of the presence of Cinnabon®, which undermines our plans to eat healthily, as the natural result of a free-market equilibrium. But it is: if Rich and Greg Komen hadn’t

done it, sooner or later someone else would have had a similar—although almost surely not identical—idea. The free-market system exploits our weaknesses automatically.

Finger Exercise Two: Health Clubs

Back in the spring of 2000, Stefano DellaVigna and Ulrike Malmendier were both graduate students at Harvard.⁷ They were taking a special reading class in Psychology and Economics, down the Charles River, at MIT. They decided to find an example of the bad economic decision making that was the topic of this then-new field. They alighted on one they could find in their neighborhood: health clubs. Our main interest in health clubs is as an example of phishing for phools. But they are also of some interest for their own sake. In 2012, health clubs were a \$22 billion industry in the United States, with more than 50 million customers.⁸

DellaVigna and Malmendier constructed a dataset of more than 7,500 health club users in the Boston area.⁹ As budding jocks, when the customers were first at the health club, they were overoptimistic about their exercise plans; and they signed into contracts for which they overpaid. Typically, they would choose among three different methods of payment: by the visit; a contract to pay by credit card with automatic monthly rollover, unless cancelled; or by annual contract. Most (nonsubsidized) customers chose the monthly contract. But 80 percent of them would have paid less by the visit. Furthermore, the losses from this wrong choice were significant: \$600 per year, out of average payments of \$1,400.¹⁰ Additionally, to add insult to injury, the health clubs put roadblocks in the way of cancellation. Of the 83 clubs offering automatic monthly renewal in the DellaVigna-Malmendier sample, all accepted cancellation by personal appearance; but only 7 would accept cancellation by phone. Only 54 would accept a letter; and, of these, 25 required it to be notarized.¹¹

Of course the health clubs' offerings of these contracts in which people were "paying not to go to the gym"¹² were no coincidence. Since customers were willing to sign into contracts that were more profitable to provide than pay-per-visit, in phishing equilibrium we would expect them to be there. Otherwise there would have been unused opportunity for profit.

Finger Exercise Three: Monkey-on-the-Shoulder Tastes

The problems with a pure free-market equilibrium can be imagined better if we consider a metaphor for such a phishing equilibrium. Economist Keith Chen and psychologists Venkat Lakshminarayanan and Laurie Santos have succeeded in teaching capuchin monkeys how to use money to trade.¹³ In a remarkable beginning for a free-market economy, the monkeys developed an appreciation for prices and expected payoffs; and they even exchanged sex for money.¹⁴

But let's, in our mind's eye, go way beyond the experiments already done. Suppose we opened the monkeys up to trading with humans quite generally. We would give a large population of capuchins substantial incomes and let them be customers of for-profit businesses run by humans, without regulatory safeguards. You can easily imagine that the free-market system, with its taste for profits, would supply whatever the monkeys choose to buy. We could expect an economic equilibrium, with concoctions appealing to strange capuchin tastes. This cornucopia would give the monkeys their choices; but those choices would be very different from what makes them happy. We already know, from Chen, Lakshminarayanan, and Santos, that they love Marshmallow Fluff-filled Fruit Roll-Ups.¹⁵ Capuchins have limited ability to resist temptations. We have every expectation that they would become anxious, malnourished, exhausted, addicted, quarrelsome, and sickened.

We now come to the point of this thought experiment; we will see what it has to say about humans. Our view of the monkeys has analyzed their behavior as if they have two types of what economists call "tastes." The first type of "tastes" are what the capuchins would exercise if they made the decisions that are good for them. The second type of "tastes"—their Fruit Roll-Up tastes—are those they actually exercise. Humans are, no doubt, smarter than monkeys. But we can view our behavior in the same terms. We can imagine us humans, like the capuchins, as also having two different types of tastes. The first concept of "tastes" describes what is really good for us. But, as in the case of the capuchins, that is not always the basis for all of our decisions. The second concept of "tastes" are the tastes that determine how we really, actually make our choices. And those choices may not, in fact, be "good for us."

The distinction between the two types of tastes and the example of the capuchins gives us an instructive image: we can think about our economy as if we all have monkeys on our shoulders when we go shopping or when we make economic decisions. Those monkeys on our shoulders are in the form of the weaknesses that have been exploited by marketers for ages. Because of those weaknesses, many of our choices differ from what we “really want,” or, alternatively stated, they differ from what is good for us. We are not generally aware of that monkey on our shoulder. So, in the absence of some curbs on markets, we reach an economic equilibrium where the monkeys on the shoulder are substantially calling the shots.

The Alleged Optimality of a Free-Market Equilibrium

There is a perhaps surprising result that, indisputably, lies at the very heart of economics. Back in 1776, the father of the field, Adam Smith, in *The Wealth of Nations*, wrote that, with free markets, as if “by an invisible hand ... [each person] *pursuing his own interest*” also promotes the general good.¹⁶

It took a bit more than a century for Smith’s statement to be precisely understood. According to the modern version, commonly taught even in introductory economics, a competitive free-market equilibrium is “Pareto optimal.”¹⁷ That means that once such an economy is in equilibrium, it is impossible to improve the economic welfare of everyone. Any interference will make *someone* worse off. For graduate students, this conclusion is presented as a mathematical theorem of some elegance—elevating the notion of free-market optimality into a high scientific achievement.¹⁸

The theory, of course, recognizes some factors that might blemish such an equilibrium of free markets. These factors include economic activities of one person that directly affect another (called “externalities”); they also include bad distributions of income. Thus it is common for economists to believe that, those two blemishes aside, only a fool would interfere with the workings of free markets.¹⁹ And, of course, economists have also long recognized that firms that are large in size may keep markets from being wholly competitive.

But that conclusion ignores the considerations that are central to this book. When there are completely free markets, there is not

only freedom to choose; there is also freedom to phish. It will still be true, following Adam Smith, that the equilibrium will be optimal. But it will be an equilibrium that is optimal, not in terms of what we really want; but an equilibrium that is optimal, instead, in terms of our monkey-on-our-shoulder tastes. And that, for ourselves, as for the monkeys, will lead to manifold problems.

Standard economics has ignored this difference because most economists have thought that, for the most part, people do know what they want. That means that there is nothing much to be gained from examining the differences between what we really want and what those monkeys on our shoulders are, instead, telling us. But that ignores the field of psychology, which is, largely, about the effects of those monkeys.

As exceptions, behavioral economists, especially for the past forty years, have been studying the relationship between psychology and economics. That means that they have brought the consequences of the monkeys to center stage. But, curiously, to the best of our knowledge, they have never interpreted their results in the context of Adam Smith's fundamental idea regarding the invisible hand. Perhaps it was just too obvious. Only a child, or an idiot, would make an observation like that and expect anyone to notice. But we will see that this observation, simple as it may be, has real consequences. Especially so, because, as Adam Smith might say, as if by an invisible hand, others out of their own self-interest will satisfy those monkey-on-the-shoulder tastes.

Thus we may be making only a small tweak to the usual economics (by noticing the difference between optimality in terms of our real tastes and optimality in terms of our monkey-on-the-shoulder tastes). But that small tweak for economics makes a great difference to our lives. It's a major reason why just letting people be *Free to Choose*—which Milton and Rose Friedman, for example, consider the sine qua non of good public policy—leads to serious economic problems.²⁰

Psychology and Monkeys on the Shoulder

Not all of psychology concerns the reasons why people make “dysfunctional” decisions. Some of it describes the working of the healthy human mind. But a great deal of the subject concerns decisions that

give people what they think they want rather than what they really want. We see this by going back to an application of psychology as it was taught in the mid-twentieth century. The psychology of those days was largely based on Freud with special emphasis on his now experimentally validated conclusion regarding the role of the subconscious in decision making. Vance Packard described ways in which marketers and advertisers are *Hidden Persuaders* (which was the title of his 1957 book). That is, they manipulate us through our subconscious. In one example, which George and Bob both remember from more than fifty years ago, the makers of cake mixes appealed to housewives' desire for creativity by unnecessarily requiring the addition of an egg. Or, in another example, insurance companies played on desires for immortality through advertising that, curiously, portrayed the deceased father in after-death family pictures.²¹

Social psychologist/marketer Robert Cialdini has written a book full of impressive evidence of psychological biases.²² According to his "list," we are phishable because we want to reciprocate gifts and favors; because we want to be nice to people we like; because we do not want to disobey authority; because we tend to follow others in deciding how to behave; because we want our decisions to be internally consistent; and because we are averse to taking losses.²³ Following Cialdini, each of these respective biases is paired with common salesman's tricks. One such example concerns how his brother, Richard, paid his way through college. Every week, Richard would purchase two or three cars from the advertisements in the local newspapers. He would clean them up and offer them for sale again. Here, Richard put "loss aversion" to work. Richard did not, as most of us would do, schedule his prospective buyers to come at different times. Instead, intentionally, he scheduled them with overlap. Each buyer, whatever the merits of the prospective car, was then apprehensive that he might lose out: that other guy might get *his* car.²⁴

Information Pools

A great deal of phishing comes from another source: from supplying us with misleading, or erroneous, information. The phishermen in this guise play on what their customers think they will get. There are two ways to make money. The first is the honest way: give customers

something they value at \$1; produce it for less. But another way is to give customers false information or induce them to reach a false conclusion: so they think that what they are getting for \$1 is worth that; even though it is actually worth less.

This book will be filled with many such examples, especially in the realm of finance. The finance optimists think that complicated financial transactions are about benignly dividing up risk and expected returns in the best possible way among people with different tastes for them, just as children used to trade marbles or baseball cards. People are smart, especially in finance, the mantra goes; the best way to police financial markets is to let them police themselves. As a notable example of the application of this mantra to public policy, the Commodity Futures Modernization Act of 2000 enabled extraordinarily complicated financial products to trade with only minimal supervision. The markets, it was said, would police themselves.

But just because we can say the mantra does not make it true. Another way to make money in finance is not to sell people what they really want. Remember the magician's trick: he puts a coin underneath one of three jars, swirls them around, and then opens them all up.²⁵ The coin is gone. But where is it? Voilà: it is in the hand of the magician. And that is what can also happen in the world of complicated finance. Figuratively, we buy a security that entitles us to whatever coin will appear when the cups are uncovered. But then in the swirl of complicated finance, somehow the coin is transferred to the magician's hand, so that when the cups are turned over, we get nothing. Later in the book we will present three chapters on financial manipulations. Each of these chapters will show many such tricks that can be considered as taking the coin from the swirling cups. More concretely, they entail maneuvers such as clever financial accounting and overly optimistic ratings. In this case people know what they want; but the clever manipulation of information suggests that they are getting what they want, when they are, on the contrary, getting something far different. Finally, we note that as long as there are profits to be made from such magicians' tricks, the magicians will be there. That is the nature of the economic equilibrium. And that is the basic reason why financial markets especially are in need of careful oversight. But we are getting a bit ahead of our story.

Theory and Practice

So far we have given the theory of phishing equilibrium and a few examples to illustrate it. That theory suggests that in real-life economic equilibrium there will be a lot of phishing for phools. The equilibrium occurs for the same reason that the lines in the supermarket seldom differ much in length: because the sequential customers are choosing what they consider to be the shortest line. Similarly, in competitive markets opportunities to make profits by phishing us for phools will be taken. We will now turn to the rest of the book, which will give example after example of how this general principle plays significant roles in our lives.

Where We Go from Here: Outline of *Phishing for Phools*

The book is divided into this introduction and three parts.

Introduction: Phishing Equilibrium. The major role of this introductory chapter has been to explain the concept of phishing equilibrium and the consequent inevitability of phishing. Returning to Cinnabon®, that inevitability means that in the absence of the Komens, someone else, among the world's billions, would have taken their place. Of course, what is true regarding the Komens also holds in every phishing equilibrium: if one person does not take up the opportunity for profit, it will be taken by someone else.

Part One: Unpaid Bills and Financial Crash. It is one thing for us (Bob and George) to create images about monkeys on our shoulders; to put *ph*'s rather than *f*'s on the beginning of words; and to talk abstractly about economic equilibrium. It is another to show that those *ph*'s and those equilibria play significant roles in our lives. The next two chapters, which constitute part one, make a first stab at hammering this home. Chapter 1 shows why most consumers end the month, or the week, worrying about how to pay their bills, and quite frequently fail to do so. We are all capable of making mistakes, and many of those mistakes are aided and abetted by those who are trying "to sell us something." Chapter 2 shows the role of phishing for phools in the Financial Crisis of 2008, with its devastating worldwide

consequences. A good part of this story is what we call reputation mining on the part of many firms and advisors: the more-or-less-deliberate drawing down for profit of hard-won reputation for integrity. As of this writing we have not yet fully recovered from this crisis; and the same forces that led to this financial crisis are elements of our economic equilibrium. Those forces are hard to tame, and we must understand them, both to decrease the likelihood the crises will come again, and to handle them, if and when they do happen.

Part Two: Phishing in Many Contexts. Part two takes a new tack. It concerns the role of phishing for phools in specific contexts: advertising and marketing; real estate, car sales, and credit cards; lobbying and politics; food and drugs; innovation and economic growth; alcohol and tobacco; and two specific financial markets. We will give a separate outline of this section when we come to it.

Part two further reinforces the significance of phishing for phools in our lives. But there are other important lessons. The many examples throughout this book serve as practice exercises in the perception and understanding of phishing for phools. Part two will present new examples of phishing equilibria, and thus of the inevitability of the phish, as a consequence, not of evil people, but instead of the natural working of our economic system. Additionally, and perhaps most importantly, the experience we gain from these exercises regarding phishing for phools in different contexts leads us to a new perspective on the where and how of its practice. Beginning with the chapter on advertisers and marketers, whose duty is to lead us to buy what they are commissioned to promote, we will offer a new, more general view (beyond Cialdini's list and beyond current behavioral economics) regarding what makes people manipulable. People largely think by situating themselves within a story. A leading strategy of manipulation is to lead phools to graft new stories (advantageous to the phishermen) onto the old ones. (We add, parenthetically, that a major role of psychologists—literally from Freud to Kahneman—has been to elicit those stories that people are telling themselves. The psychologists have technical terms for them: such as “mental frames” or “scripts.”)²⁶

Part Three: Conclusion and Afterword. That takes us to the “conclusion.” Parts one and two will have visited phishing for phools in

settings ranging from the very general, such as consumer spending and financial markets, to the quite particular, such as congressional elections or the ways in which Big Pharma parries its regulators and phishes the doctors who prescribe its medicines. From these disparate examples, and from our theory of phishing, we will describe our new characterization, which gives us—and we hope will also give you—a new sense about economics: with an awareness of phishing for phools, and where and when it occurs. In the conclusion, “New Story in America and Its Consequences,” we will see how this new perspective applies to current economic and social policy in the United States, with examples from three different areas of economic policy.

The afterword follows. It is written especially with regard to our potential critics, who we know will be asking if there is anything new in *Phishing for Phools*. This afterword presents our view of what, where, and how this book makes a contribution to economics.

We intend *Phishing for Phools* to be a very serious book. But we also intend it to be fun. We hope that you will enjoy the stories and the insights on the journey to conclusion and afterword, above and beyond any capital-M “Messages” entailed in appropriate appreciation of “phishing for phools.”

the Million Women Study,” *Lancet* 362, no. 9382 (August 9, 2003): 419–27. The extrapolation is conservative, since hormone replacement therapy was more common in the United States than in Britain.

27. Centers for Disease Control and Prevention, *Health, United States, 2013: With Special Feature on Prescription Drugs*, p. 213, table 64, accessed December 1, 2014, <http://www.cdc.gov/nchs/data/abus/abus13.pdf>. Figures are for 2011–12 for adults age 20 and over. We note that there has been more than a 50 percent increase in this fraction from the 22 percent recorded as obese in 1988 to 1994.

28. Dariush Mozaffarian et al., “Changes in Diet and Lifestyle and Long-Term Weight Gain in Women and Men,” *New England Journal of Medicine* 364, no. 25 (June 23, 2011): 2395–96, accessed October 30, 2014, <http://www.nejm.org/doi/full/10.1056/NEJMoa1014296?query=TOC#t=articleTop>.

29. Michael Moss, *Sugar, Salt and Fat* (New York: Random House, 2013), Kindle location 287–89 out of 7341.

30. Adult smoking rates decreased from 43 percent in 1965 to 18 percent in 2014. “Message from Howard Koh, Assistant Secretary of Health,” in US Surgeon General, *The Health Consequences of Smoking—50 Years of Progress* (2014), accessed March 6, 2015, <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf>.

31. The most famous advertising campaign along these lines was “Reach for a Lucky Instead of a Sweet.” The lengthy copy explaining the health and beauty enhancements of Luckies ends: “A reasonable proportion of sugar in the diet is recommended, but the authorities are overwhelming that too many fattening sweets are harmful and that too many such are eaten by the American people. So, for moderation’s sake we say:—‘REACH FOR A LUCKY INSTEAD OF A SWEET.’” A 1929 advertisement for Lucky Strike cigarettes, from Julian Lewis Watkins, *The 100 Greatest Advertisements, 1852–1958: Who Wrote Them and What They Did* (Chelmsford, MA: Courier, 2012), p. 66. Reproduced at <https://beebo.org/smackerels/lucky-strike.html>. Last accessed March 29, 2015.

32. David J. Nutt, Leslie A. King, and Lawrence D. Phillips, on behalf of the Independent Scientific Committee on Drugs, “Drug Harms in the UK: A Multicriteria Decision Analysis,” *Lancet* 376, no. 9752 (November 6–12, 2010): 1558–65; Jan van Amsterdam, A. Opperhuizen, M. Koeter, and Willem van den Brink, “Ranking the Harm of Alcohol, Tobacco and Illicit Drugs for the Individual and the Population,” *European Addiction Research* 16 (2010): 202–7, DOI:10.1159/000317249.

33. Nutt, King, and Phillips, “Drug Harms in the UK,” p. 1561, fig. 2.

Introduction: Expect to Be Manipulated: Phishing Equilibrium

1. Regarding the story of Eve—and also the fundamental view of this chapter and this book—it is useful to think of the interchange between Eve and the serpent as an equilibrium outcome in which the serpent purposefully takes advantage of an opportunity. Furthermore, we imagine him as premeditatedly waiting for Eve—having rehearsed to himself the pitch

that he will use. Among the many animals in the garden, it was that terrible serpent—and not some more innocent animal, such as a rabbit or a giraffe—who “just happened” to be there at the apple tree. The phisherman was there by design. Following the central theme of this chapter, that was no coincidence. The encounter was just what we would expect in a phishing equilibrium. We note that a literal reading might alternatively see the Creation itself as “the first story of the Bible.” A Google search revealed that our view of the eating of the apple as “the first story” is not unusual.

2. In a conversation with George some twenty-five to thirty years ago, Kahneman emphasized this difference between economics and psychology.

3. Paul Krugman and Robin Wells, *Microeconomics*, 2nd ed. (New York: Worth Publishers, 2009), pp. 12–13, use this example to explain the nature of equilibrium. Robert H. Frank and Ben Bernanke also refer to this image in *Principles of Macroeconomics* (New York: McGraw Hill, 2003).

4. See Cinnabon, Inc., “The Cinnabon Story,” accessed October 31, 2014, <http://www.cinnabon.com/about-us.aspx>.

5. Ibid.

6. “Cinnabon,” *Wikipedia*, accessed October 22, 2014, <http://en.wikipedia.org/wiki/Cinnabon>.

7. Email from Stefano DellaVigna to George Akerlof, October 25, 2014.

8. International Health, Racquet, and Sportsclub Association, “Industry Research,” accessed October 22, 2014, <http://www.ihrsa.org/industry-research/>.

9. Stefano DellaVigna and Ulrike Malmendier, “Paying Not to Go to the Gym,” *American Economic Review* 96, no. 3 (June 2006): 694–719. See also DellaVigna and Malmendier, “Contract Design and Self-Control: Theory and Evidence,” *Quarterly Journal of Economics* 119, no. 2 (May 2004): 353–402.

10. DellaVigna and Malmendier, “Paying Not to Go to the Gym,” p. 696.

11. DellaVigna and Malmendier, “Contract Design and Self-Control,” p. 391, and p. 375, table 1.

12. The title of DellaVigna and Malmendier’s article in the *American Economic Review*.

13. M. Keith Chen, Venkat Lakshminarayanan, and Laurie R. Santos, “How Basic Are Behavioral Biases? Evidence from Capuchin Monkey Trading Behavior,” *Journal of Political Economy* 114, no. 3 (June 2006): 517–37.

14. Stephen J. Dubner and Steven D. Levitt, “Keith Chen’s Monkey Research,” *New York Times*, June 5, 2005.

15. Venkat Lakshminarayanan, M. Keith Chen, and Laurie R. Santos, “Endowment Effect in Capuchin Monkeys,” *Philosophical Transactions of the Royal Society B: Biological Sciences* 363, no. 1511 (December 2008): 3837–44.

16. Adam Smith, *The Wealth of Nations* (New York: P. F. Collier, 1909; originally published 1776), p. 19. Emphasis added.

17. For a version of Pareto’s original writings, see Vilfredo Pareto, *Manual of Political Economy: A Critical and Variorum Edition*, ed. Aldo Montesano et al. (Oxford: Oxford University Press, 2014). This edition derives from *Manuale di Economia*, published in Italy in 1906, and also a later edition in French.

18. In 1954, Kenneth Arrow and Gerard Debreu published a joint article that proved the existence of such an equilibrium under rather general conditions. In due course both of them would receive the Nobel Prize: Arrow in 1972, and Debreu in 1982, both of them especially cited for this contribution. The existence of the general equilibrium, even with the generality of their assumptions, does not appear to us to be of tremendous interest (especially since it occurs for what to us is the obvious mathematical reason). But it was only a short step from there to the real economic pay dirt: that such equilibria are “Pareto optimal” under the same general conditions. To us this seems like a remarkable result. It means that, for a wide range of fairly natural assumptions, the equilibrium of competitive markets has properties that are quite good. That will be the result we emphasize here; it confirms in a precise way Adam Smith’s intuition. The famous paper is Kenneth J. Arrow and Gerard Debreu, “Existence of an Equilibrium for a Competitive Economy,” *Econometrica* 22, no. 3 (July 1954): 265–90.

19. Of course, there are other possible “blemishes” to economies, such as monopoly and oligopoly, which have received a great deal of attention from economists. But these are not “blemishes of free markets.” Instead they are departures from them.

20. Milton Friedman and Rose D. Friedman, *Free to Choose: A Personal Statement* (New York: Harcourt Brace Jovanovich, 1980).

21. Vance Packard, *The Hidden Persuaders: What Makes Us Buy, Believe—and Even Vote—the Way We Do* (Brooklyn: Ig Publishing, 2007; original ed., New York: McKay, 1957), pp. 90–91 (cake mixes); p. 94 (insurance).

22. Robert B. Cialdini, *Influence: The Psychology of Persuasion* (New York: HarperCollins, 2007).

23. These correspond to Cialdini’s categories of “reciprocation,” “liking,” “authority: directed deference,” “social proof,” “commitment and consistency,” and “scarcity.” We have referred to “scarcity” as “loss aversion” since Cialdini emphasizes (*ibid.*, p. 204) that “the way to love anything is to realize it might be lost [*sic*].” Behavioral economists would, we think, have a slightly different classification.

24. *Ibid.*, pp. 229–30.

25. London School of Economics economist Eric Eyster told George that he witnessed this magic trick used in a con game on the Chicago subway. The tricksters boarded his subway car, set the cups up on the floor, and did their swirl, inviting passengers to guess where the coin would end up. After several practice rounds, in which the guesser had given the correct answer, the con men would then invite someone to bet \$100 that he would identify where the coin had ended up in the next round. Again the tricksters did the swirl, but the coin turned up elsewhere. The con men collected their \$100, and they quickly disappeared off the subway at the next stop. Private conversation, June 2011.

26. It is useful to give some examples to illustrate what we mean. In the case of Vance Packard, the cake-baking housewives are embedding themselves in a story in which they are creative; the insurance-purchasing men are embedding themselves in a story in which they are literally “in the pic-

ture.” It is useful to look at Cialdini’s list of behaviors, since they encompass most of the psychological biases that have formed the basis for behavioral economics. According to Cialdini, the purchasers of his brother Richard’s cars are embedding themselves in a story in which they are thinking of the possibility that they will “lose” the car (they are what Kahneman has called loss averse); what we here call stories, he calls “mental frames.” For the other five items on Cialdini’s list we can again view people as making their decisions from the point of view of a “story.” People want to reciprocate gifts and favors: to do so they must be taking part in a story in which someone gives a gift, and it would be wrong not to reciprocate. People want to be liked: to do so they must be taking part in a story in which they are liked, or not liked, by someone else. People have deference to authority: to have this emotion they must consider themselves part of a story in which someone has authority over them. For example, in the famous experiment by Stanley Milgram in which a “teacher” told subjects to deliver electric shocks to a “learner,” the subjects were identifying with the “teacher” who was in “authority,” and they strongly resisted their inclinations to disobey (Stanley Milgram, *Obedience to Authority: An Experimental View* (New York: Harper & Row, 1974)). People tend to follow others (social proof): in this case they must be telling themselves a story in which either those others have better judgment or information than they do (in the information explanation); or else they do not want to incur disapproval by failing to conform (in the social conformity explanation). People want their decisions to be consistent: to do so they must be taking part in a story about consistency among their disparate decisions. Of course Freudian psychology is full of the implicit stories that are consciously, or unconsciously, going through people’s minds.

Chapter One: Temptation Strews Our Path

1. Suze Orman, *The 9 Steps to Financial Freedom: Practical and Spiritual Steps So You Can Stop Worrying*, 2nd paperback ed. (New York: Crown/Random House, 2006). More than three million sold is claimed on the Suze Orman website, last accessed November 4, 2014, <http://www.suzeorman.com/books-kits/books/the-9-steps-to-financial-freedom/>.

2. It is useful to look at such a textbook. N. Gregory Mankiw’s *Principles of Economics* (New York: Harcourt, Brace, 1998) is an especially good introduction to current economics, and it therefore gives an excellent example, but we could have sampled many others instead. Mankiw’s chapter 21, on “The Theory of Consumer Choice,” illustrates. As in most modern textbooks, he does not choose the proverbial apples and oranges, but instead Pepsi and pizza. The “budget constraint” is said to be the consumer’s income of \$1,000. The consumer’s “optimal choice” with a price for Pepsi of \$2 and a price of pizza of \$1 is pictured in a graph (p. 456). The end of the chapter concludes with a disclaimer: “Do people really think this way? At some point, however, you might be tempted to treat the theory of consumer choice with some kind of skepticism.... And you know that you do not decide by writing down budget constraints and indifference curves. Doesn’t this knowledge about