INDEX

Page locators in italics indicate exhibits.

academic finance community, 37
Ackerman, Ernest, 159
action, 155
adaptability, 154. See also
complex adaptive systems
adaptive decision rules, 219
advertising, 88
affect, 86–88, 87
after-tax measures, 161, 166
gency costs, 57, 64
agent-based models, 233,
246, 256
aggregate return, 141
aggregation, 194, 197
Alliance Capital, 73
analysts, imitation and, 93
analytical decision making,
84–86, 85
anchoring, 14, 95, 223
Anderson, Philip, 204
anomalies, 32
ante, 28
ant examples, 90–92, 92, 188,
190, 194
appropriate reference class, 37
arbitrage, 90, 93, 96
Ariane rocket, 35
Arrow, Kenneth, 35
Arthur, W. Brian, 101
Asch, Solomon, 79
Asch experiment, 79, 79
asset life, average, 144
asset price distributions, 210–11
As the Future Catches You
(Enriquez), 126
attribute-based approach, 33–34
authority, 78, 80
automobile industry, 121, 132
availability heuristic, 220
averages, 100
Axtell, Rob, 231, 233
Babe Ruth effect, 24
baboons, 267n. 1
Baer, Gregory, 49, 264n. 8,
265n. 9
Bak, Per, 232
Barlow, Horace, 190
baseball, 47–48, 264nn. 6, 7
basketball, 46, 47
Beat the Dealer (Thorp), 27, 28
beauty-contest metaphor, 100
behavioral finance, 12, 69,
94–95, 256. See also loss
aversion; psychology of
investing
behaviors: anchoring, 14, 226; certainty and, 11–12; herding, 98, 207; information overload, 13; pattern-seeking, 46–47, 70

Beinhocker, Eric, 156

belief, 30, 36, 37

bell curve, 186

Benartzi, Shlomo, 53, 54–55

Bernoulli, Daniel, 105, 209–10

Bernstein, Peter, 31, 39

Bernstein, William, 59

BetFair, 196

Bet with the Best (Crist), 26–27

Bezos, Jeff, 130

blackjack, 27, 36

Black-Scholes options-pricing model, 37–38, 205

Bogle, Jack C., 19–20, 260n. 3

bomb search, 97, 201

boom-and-bust phenomenon, 134–36

Bosch-Domènech, Antoni, 94

boundary rules, 152

Brady commission, 219

brain development, 120, 136

Buffett, Warren, 15, 26, 55, 65, 204, 246–48

buy-and-hold strategy, 55–56

Calculated Risks (Gigerenzer), 36–37

Calvin, William, 217

Camerer, Colin, 256–57

Campbell, Donald, 146, 191

capital, tangible vs. intangible, 161–63

capital-asset pricing model (CAPM), 32

capital gains taxes, 161

card experiment, 84, 107

Carlile, Paul, 29, 30–31, 32

cash flow return on investment (CFROI), 166–67, 167; downturns, 169

cash-flow-to-net-income ratio, 163–64
categorization, 29–33

cause and effect, 31, 185–86, 219; complex adaptive systems and, 218, 219; human explanation for, 218, 219; press reports, 224–26, 225–26, 227–28

cause and effect thinking, 207–8

cave paintings, 126
centralized control, 218, 221
certainty/uncertainty, 11–13

Chamberlain, Wilt, 47

Chan, Louis K. C., 235

change, 96

character traits, 2

chess-game analogy, 149–51, 150

Christensen, Clayton M., 29, 30–33, 235, 240

Churchill, Winston, 121, 124

Cialdini, Robert, 78, 81
circumstance-based approach, 30, 33
Citron, Robert, 102–3
city-size distributions, 231, 232, 233
classical economic theory, 85, 94
clockspeed, 144–47, 145;
evolution of investors, 147
Clockspeed: Winning Industry Control in the Age of Temporary Advantage (Fine), 144
coin-toss experiment, 46–47, 48–50, 212–14, 212, 213, 285n. 6
collective: accuracy of, 162–63;
decision making, 57–58, 76, 83–85, 151–54, 153;
investment edge, 165, 166;
markets created from, 164–65; problem solving, 163–64, 183–84, 230n. 3. See also diversity
Columbia Business School, 255
commitment, 78, 81, 95
communication technology, 126–29
companies: average asset life, 144; niches, 236–37
company size: distribution of, 230, 231–32, 233–34; growth rates and, 235–40
competence, circle of, 28
competitive advantage, 144–46, 153–54; growth and returns, 165–66
competitive strategy, 237;
clockspeed, 144–47;
fitness landscapes, 154–56;
See also innovation
complex adaptive systems,
218; cause and effect and, 222–23; control and, 218–19; properties and mechanisms, 218; stock market, 3, 185–86, 219–20
complexity theory, 3, 186
Complexity (Waldrop), 3
compliance with requests, 78
corporate industry, 132, 133, 134, 135
conformity, preference for, 91
consciousness, 216–17
consilience, 255–57; areas to address, 257
Consilience (Wilson), 2
consistency, 78–79, 81
constructs, 32
context, 30, 34, 38
control: complex adaptive systems and, 222–23; loss of, 72–73
conventions, 100
Cornell, Bradford, 159, 193
corporate routines, 142
Corporate Strategy Board, 141–42, 239–40
corpus callosum, 222
correctness, frequency vs. magnitude of, 24–28, 25, 28
correlation, 226
cost of capital, reversion to, 166–68
costs: agency, 64; portfolio turnover and, 55, 57, 65
Craven, John, 97
creative destruction, 122, 139, 146
Creative Destruction (Foster and Kaplan), 140–42, 146–47
creative thinking, 191–92
Crist, Steven, 11, 26–27
critical state, 206, 224, 232–33
cycle time, 144
Daimler-Benz Aerospace (DASA), 35
Damasio, Antonio, 83–85, 107
Darwin, Charles, 2, 153, 154
decision making: accuracy of collective, 218–20; analytical, 83–84; certainty, 11–12; decentralized systems, 193–97; decision markets, 195–96; emotions and, 84–86; experiential system, 84, 85, 85, 88; frame of, 53; individual vs. collective, 69–70, 84, 96–97, 217–20, 218; input diversity, 218–19; by insects, 185; markets and, 88–89; principles, 11–14; prospect theory, 24, 47, 86, 255–56; suboptimal, 85–86; weighing probabilities, 12.
See also problem solving
decision markets, 195–96
decision rules, adaptive, 218, 219
decision trees, 26
deductive processes, 99
Deep Blue, 149
DePodesta, Paul, 9
description, 31–33, 191
destruction, creative.
See creative destruction
determinism, 223
digital language, 127–29
DiMaggio, Joe, 48, 264 n. 6, 7
discounted cash flow, 147, 157
discount rates, 161
disk drive industry, 132, 133, 134, 135
distribution, 37–39, 178; asset price, 206; city size, 231, 232, 233; company size, 230, 231, 233–34; experience vs. exposure, 204; fat tails, 93, 186, 203, 205 206, 207; normal, 186, 205, 207; power laws and, 229–30; species, 235–36
financial services, 156, 287n. 11
financial statements, inflation
and, 161
Fine, Charles, 144
Finucane, Melissa L., 83
Fisher, Lawrence, 31
fitness landscapes, 154–55, 158;
short vs. long jumps, 156–57;
types of, 155–56
flight simulators, 257
focus, 27–28; short-term,
62–64, 267–68n. 8. See also
long term, management for
Fooled by Randomness
(Taleb), 25
Fortune 50, 237–39, 237
Foster, Richard, 139–42, 146
fractal systems, 211–12, 211
French, Kenneth, 145
frequencies, 37; magnitude vs.,
23–27, 25, 28
fruit flies (Drosophila
melanogaster), 143–44
fundamental analysis, 16
Galton, Francis, 201
gambling, 7, 24, 69, 244,
247, 261n. 1
Gates, Bill, 111, 143
Gazzaniga, Michael, 222
General Electric, 278n. 11
General Theory of Employment,
The (Keynes), 99
Gensler, Gary, 49, 265n. 9
Gibrat’s law, 238
Gigerenzer, Gerd, 35
global economy, 140, 161, 163
Go (game), 149
Gordon, Deborah, 194
Gorilla Game, The (Moore), 139
Gould, Stephen Jay, 46, 51
Greenspan, Alan, 71
Gross, Bill, 46, 49
gross domestic product (GDP),
123, 123, 125, 125
growth rates, 280n. 9; company
size and, 230–34; returns and,
165–66; species distribution,
235–36; stall point, 141–42,
241–42; variance of, 180,
237, 238, 238
growth-stock investing, 209–10
“Growth Stocks and the Petersburg
Paradox” (Durand), 214
growth-stock valuation, 209–10
guppies, 89–90
handicapping, 7, 26–27, 87
Hanson, Robin D., 193
Hargadon, Andrew, 121, 122
Harmon, Butch, 153
Hayek, Freidrich, 198
hedge funds, 186, 191, 203
Henry, David, 203
herding, 91, 93, 98, 207
Hewlett-Packard, 201
hieroglyphics, 126, 127
hindsight bias, 100, 102–3
hitting streaks, 47–48,
264nn. 4, 7
Downloaded from cupola.columbia.edu
Holland, John H., 148, 217
Hollywood Stock Exchange, 185, 195
honeybees, 185–86
hot hand phenomenon, 46
Howard, Jack, 97
how-to rules, 152
Human Behavior and the Principle of Least Effort (Zipf), 229–30
Huston, Larry, 200
imitation, 70, 89–91, 93, 196–97, 219–20; fat tails and, 186; positive feedback and, 90–93; suboptimal, 85–86
impressions, 85–86
imprinting, 139
inactivity, value of, 55–58
incentives, 8, 63–64, 160
index funds, 15, 17
inductive processes, 99
Inefficient Markets: An Introduction to Behavioral Finance (Shleifer), 96
inflation, 161, 162
Influence: The Psychology of Persuasion (Cialdini), 78
information, 13, 91, 129
information cascades, 207, 224
information flows, 256
Innocentive, 200
innovation, 119–20, 276n. 4; communication technology, 126–29; considered by
market, 113–14; creation of wealth, 123–25; creative destruction, 122, 142; dynamics of, 131–34; leader/challenger dynamics, 137–38; overproduction and pruning, 131–36, 135; phases of, 131–32; recombination, 121–22, 154–55, 274n. 1. See also competitive strategy
Innovation: The Attacker’s Advantage (Foster), 140
Innovator’s Solution, The (Christensen and Raynor), 240
insects, 185; ants, 97–98, 184–88, 189, 194; honeybees, 193–94; stock market parallels with, 194–95
instructions, 124
intelligence, diversity and, 190–91
Internet, 132–33, 133, 234
intuition, 85
investment business, 19–22, 21
investment philosophy: decision-making principles, 11–14; evaluation of winners, 17–19; internalizing, 8; long-term perspective, 7–8; process vs. outcome, 7, 10, 10; scouting report, 15–17. See also psychology of investing
INDEX

investment process, 8, 10–11, 110
investment profession, 19–22, 244
investors: average holding period, 73, 75; diversity of, 90–92, 186, 187–89; evolution of, 144; understanding of power laws, 230–31
Iowa Electronic Markets (IEM), 195
janitor’s dream, 217, 219
jellybean-jar experiment, 97, 201
Johnson, Norman, 187–90
judgment, 85
Kahneman, Daniel, 24, 46, 69, 85, 255; decision-making model, 85–86
Kaplan, Sarah, 139–42, 146
Karceski, Jason, 235, 240
Kasparov, Garry, 149
Kaufman, Peter, 2
Keynes, John Maynard, 91, 99–103
Knight, Frank, 35, 36
Krugman, Paul, 229
kurtosis, 38
lack of representation, 16
Lakonishok, Joseph, 165, 235, 240
Laplace, Pierre Simon, 223
Laplace’s demon, 223–24
leader/challenger dynamics, 137–38
LeDoux, Joseph, 222
Legg Mason Value Trust, 33–34
Leinweber, David, 226
Lev, Baruch, 159
Lewis, Michael, 9, 44
life cycle: clockspeed, 144–47; of companies, 72–73, 72; of fruit flies, 143–44; of industries, 239
liking, 78, 80
limited-time offers, 80
linear models, 219
lions, 137, 172
liquidity, 16
lollapalooza effects, 80
long term, management for, 7–8, 64, 148–49; strategies for winners, 149–51; strategy as simple rules, 151–52
Long Term Capital Management, 186, 204
long-term investment, loss aversion and, 52–54
Lorie, James, 31
loss, risk and, 35–36
loss aversion, 12, 24, 26, 53–54; equity-risk premium, 53–55; exhibits, 56–58; myopic, 52–54, 57; portfolio turnover, 55–59, 56; ratio of risk to reward, 57, 59; utility, 58, 59
Downloaded from cupola.columbia.edu
lottery players, 87
Lowenstein, Roger, 205–7
luck, 50–51

MacGregor, Donald G., 83
MacKay, Charles, 92, 198
Malkiel, Burton, 262n. 2
Mandelbrot, Benoît B., 209, 213–14, 231, 256
market capitalization, 16
markets: bubbles and crashes, 91, 93; collective decisions and, 69–70, 189–90; decision, 173–75; effect of psychology on, 100; efficiency of, 32, 96; innovation considered by, 134–35; interpreting, 224–25; new entrants and competitive strategy, 139–40; parallels with insect colonies, 195–97
market timing, 38, 39
Mastering the Dynamics of Innovation (Utterback), 131–32
mathematical expression, symbols for, 126
maze problem, 188
McKinsey Quarterly, 199
mean, reversion to, 166–69, 253
mental-models approach, 2
Milgram, Stanley, 80, 256
Miller, Bill, 33, 48–50, 265
Moneyball (Lewis), 9, 44
money managers, 8, 90; scouting report and, 15–16; stresses on, 72–76
Moore, Geoffrey, 139
Moore’s Law, 126, 274n. 5
Morningstar, 75
multidisciplinary perspective. See consilience
Munger, Charlie, 2, 26, 77, 80, 94
mutual funds, 19–20, 93
myopic loss aversion, 53, 57, 59
NASA, 35–36, 37
negative feedback, 90–91
Nelson, Richard R., 274n. 1
network theory, 185, 256–57
neuroscience, 255–56
Newton, Isaac, 216, 223
New York Times, 80, 165
niches, 236, 237
Nicklaus, Jack, 153
Niederhoffer, Victor, 203, 204
nonlinearity, 208, 218, 219, 224
nonstationarity, 160–61, 163, 164
opportunities, limited, 28
options, 12, 260n. 11, 261n. 4
outperforming stocks, 18; percentage of, 23–26, 25, 50; probability of, 48–51, 49
outsourcing, 124
overproduction and pruning, 131–36, 132, 133, 134, 135
ox weight problem, 201
Pandolfi, Bruce, 149–51
pari-mutuel betting, 10, 26–27
pattern seeking, 46–47, 70
payoff, 10, 12, 39
Pearson, Puggy, 69, 70
per capita GDP growth, 123, 125
Peters, Ellen, 83
pharmaceutical industry, 199–200
Philosophical Essay on Probabilities, A (Laplace), 223
Pollock, Jackson, 249–50; Number 8, 1949, 250
Poor Charlie’s Almanack (Kaufman), 2
poor-thinking problem, 95
portfolios: concentration, 17; construction, 208; fat tails and performance, 186; frequency of evaluation, 52; large cap, 242; leveraged, 205; performance vs. percentage of outperforming stocks, 23–26, 25
portfolio turnover, 17, 75, 101, 147; costs, 55, 57, 75; loss aversion, 52–55, 53; stress and, 74, 75–76
positive feedback, 90–93, 135, 196
power laws, 186, 229–34; company-size distribution and, 230–31, 233; fractals and, 211–12; investor understanding of, 230–31; Zipf’s law, 231–33
predictability, loss of, 72–73
prediction, 39, 201, 256
price changes, press reports and, 224–26, 225–26, 227–28
price-earnings ratios (P/Es), 33; bounded parameters, 163–64; growth and returns, 141–42; nonstationarity of, 160–61; reversion to mean, 166–68; tangible vs. intangible capital, 161–63; tax rates and, 161, 162
prices: expected value and, 10, 13–14; S-curve phenomenon, 138–41, 138
prioritizing, 14
priority rules, 152
probabilistic fields, 7, 26.
See also gambling; handicapping; investment philosophy
probability, 36–37; expected value and, 25–26; extreme-return days, 38–39; frequency-based, 37; loss aversion and, 54–55; outperforming stocks, 49–50, 49; propensity-based, 37; two-by-two matrix, 10; uncertainty and risk, 35–36; weighing, 12
probability dominance, 86–88
problem solving, collective mechanisms for, 185–86, 221–22
process clockspeed, 144
Procter & Gamble, 200, 241
product clockspeed, 144
propensities, 37
proportionality, 186
prospect theory, 24, 53, 86, 255–56
psychology of investing, 81–82; compliance with requests, 78–79; deductive and inductive processes, 99–102; hindsight bias, 100, 102, 103; individual and collective decisions, 69–70, 76, 187–90, 189; market, effect on, 95–96; stress, 71–75; tendencies of human behavior, 78–80; Tupperware parties, 79–81. See also investment philosophy
Purcell, Ed, 48
“Pyramid of Numbers,” 236
rationality, 93, 99, 105
Raup, David, 134
Raynor, Michael E., 235, 240
reciprocity, 78, 80–81
recombination, 121–22, 274n. 1
reductionism, 216–17
reflexivity, 93
requests, compliance with, 78–79
return on investment, 26–27, 54; CFROI, 166–70, 167, 288n. 10; distribution of, 186; equity-risk premium, 53–56; growth and, 163–64; reversion to cost of capital, 165–69; total returns to shareholder (TRS), 139–41, 140
risk, 35–36; equity-risk premium, 53–56, 139; explanation for, 209–11
risk-reward relationship, 208, 256
rival and nonrival goods, 124, 274n. 24
Rogers, Jim, 260n. 11, 261n. 4
Roll, Richard, 32
Roman alphabet, 127
Romer, Paul, 123–24
roulette, 11, 36, 39
Rubin, Robert, 9, 11–14, 62
Ruefl i, Timothy W., 143, 145, 165
rules: adaptive, 219, 220; simple, 151–52
Russo, Jay, 10, 13
Ruth, Babe, 24, 25, 27
St. Petersburg Paradox, 209–10, 214–15
Samuelson, Paul, 52–53
S&P 500, 15, 16–18, 18, 19, 50, 205, 206, 207, 225–26, 225, 288n. 10
S&P Index Committee, 16–17
sand-pile metaphor, 224, 233
Santa Fe Institute (SFI), 2–3
Sapolsky, Robert M., 71–72, 267n. 1
scarcity, 80, 82
Schoemaker, Paul, 10, 13
INDEX 327

Sunder, Shyam, 94
Surowiecki, James, 198
survivorship bias, 167–68
sustained recovery, 169, 169
system 1 and 2 thinking, 84–86
systems, 84–85, 88

Taleb, Nassim Nicholas, 25,
260n. 11, 261n. 4
target prices, 14
tax rates, 161, 162
Technology Review, 144
technology stocks, 143, 214, 243
television industry, 132
Thaler, Richard H., 52, 54–55
time horizons, 52–59,
54, 56, 57, 58, 205
timing rules, 152
tipping point, 91–92
total return to shareholders 
(TRS), 139–41 140
Tracking error, 57, 73, 91
transaction costs, 55, 161
traveling-salesman problem, 195
Treynor, Jack, 97
Tupperware parties, 77, 81
Tversky, Amos, 24, 46, 52,
69, 255
Twain, Mark, 99
two-by-two matrix, 10

Ulysses, 76
uncertainty, 35–36, 156;
classifications, 36–39;
expectations and, 100–102
U.S. Steel, 124
utility, 53, 54, 54, 58, 59,
265n. 1
Utterback, James, 131

valuation, investor evolution 
and, 147
value-at-risk (VaR) models, 205
value investors, 30, 33, 168
value traps, downturns, 168–70
volatility, 37–38, 38
“Vox Populi” (Galton), 201

Waldrop, Mitchell, 3
Watts, Duncan, 185
weak signals, 191
wealth, isolated components 
vs. total, 53
Welch, Ivo, 93
Welch, Jack, 278n. 11
Wermers, Russ, 93
wheel of fortune experiment,
226–28
Why Stock Markets Crash 
(Sornette), 214
Wiggins, Robert R., 143,
145–46, 165
wild-hair alternative, 189, 190
Wilson, Edward O., v
winner’s curse, 112, 271n. 8
Winters, Sidney, 274n. 1

Downloaded from cupola.columbia.edu
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wisdom of the Hive, The</strong> (Seeley), 193</td>
</tr>
<tr>
<td>Wolfram, Stephen, 216</td>
</tr>
<tr>
<td>Wolpert, Lewis, 221, 222</td>
</tr>
<tr>
<td>Woods, Tiger, 153–54, 155</td>
</tr>
<tr>
<td>Wright, Orville, 121–22</td>
</tr>
<tr>
<td>Zajonc, Robert B., 83</td>
</tr>
<tr>
<td>zebras, 71</td>
</tr>
<tr>
<td>Zeikel, Arthur, 191–92</td>
</tr>
<tr>
<td>Zipf, George K., 229</td>
</tr>
<tr>
<td>Zipf’s law, 229, 231, 237</td>
</tr>
</tbody>
</table>