Like a flawed painting, our self-image suffers from poor perspective: we consistently overestimate our skills and overlook flaws

By David Dunning, Chip Heath and Jerry M. Suls

There are three things extremely hard: steel, a diamond, and to know one’s self.

—Benjamin Franklin

A teenage violinist applies to music school based on her notions of her musical virtuosity. A military officer volunteers to command a dangerous mission because he is confident about his bravery, leadership and grace under pressure. A healthy elderly woman decides not to get a flu shot because she feels that it is unlikely she will fall ill.

Over their lifetimes, people base thousands of decisions on the internal pictures they hold of their own skills, knowledge, personality and moral character. During decades of research, psychologists have examined just how accurate these self-perceptions are in a wide variety of tasks and circumstances. In study after study, researchers find that self-ratings of aptitude
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hold only a tenuous to modest relation, at best, with actual performance—indeed, other people can often foresee an individual’s outcomes better than that person can. Individuals also overrate themselves. As a consequence, the average person claims to be “above average” in skill—a conclusion that, in aggregate, defies statistical possibility. He or she also overpredicts the likelihood of engaging in desirable behaviors and achieving favorable outcomes, furnishes excessively optimistic estimates of when he or she will complete future projects, and reaches judgments with too much confidence. The findings have important consequences for health, education and the workplace [see boxes on pages 23, 24 and 26–27].

Swelled Heads

How far off are self-judgments? People’s notions about their intelligence tend to correlate only 0.2 to 0.3 with performance on intelligence tests and other academic tasks. (Correlation measures the direction—positive or negative—and extent—from +1 to –1—of the relation between two scores. For example, the correlation between gender and height is roughly 0.7.) College students’ ratings of academic self-efficacy during their first year correlate only 0.35 with their instructors’ evaluations.

In the workplace, the correlation between how people expect to perform and how they actually do hovers around 0.20 for complex tasks. People in some domains do better than others. In athletics, where critiques from coaches and others who have an “outside” perspective tend to be constant, immediate and unambiguous, the typical correlation is 0.47. In the realm of complex social interactions, however, where feedback might be occasional, often delayed and ambiguous, it tends to be much lower—for instance, just 0.04 for self-assessment of managerial competence and 0.17 for interpersonal skills.

Acquaintances may predict a person’s performance in some situations better than the person himself or herself can. As Donald A. Risucci of New York Medical College and his colleagues put forth in a 1989 study, although the self-views of surgical residents are not related to their performance on standardized board exams, their supervisor’s ratings are strongly related, as are the ratings of their peers who are equally inexperienced. And in a 1991 study by Bernard M. Bass and Francis J. Yammario of Binghamton University, peer ratings of leadership, rather than self-ratings, predict which naval officers will be recommended for early promotion.

People also show in many different ways how they hold inflated views of their expertise, skills and character. Consider the tendency for the average person to see himself or herself as above average. In a 1976–1977 College Board survey of nearly one million high school seniors, 70 percent claimed to have above-average leadership skills, and only 2 percent gave themselves below-average marks. On their ability to get along with others, almost all respondents rated themselves as at least average—with 60 percent rating themselves in the top 10 percent of this ability and 25 percent rating themselves in the top 1 percent.

College students have no monopoly on such “above-average effects.” Motorcyclists believe they are less likely to cause an accident than the typical biker. Business leaders believe their company is more likely to succeed than the average firm in their industry.

Individuals also demonstrate inflated estimates of self when they assess how quickly they will complete tasks, a phenomenon known as the planning fallacy. For example, Roger Buehler of the Wilfrid Laurier University in Ontario and his colleagues reported in a 1994 study that college students take three weeks longer to finish their senior thesis than the most “realistic” estimate that they give for the task—and one week longer than what they describe as their “worst case” scenario. In a similar vein, in 1997 Buehler, Dale W. Griffin of the University of British Columbia and Heather MacDonald, then at Simon Fraser University in Burnaby, B.C., found that citizens typically believe they will complete their tax returns more than a week sooner than they actually do.

Indeed, even when people are most confident, that conviction is no guarantee of accuracy. In 1977 studies by Baruch Fischhoff of Carnegie Mellon University, Paul Slovic of the University of Oregon and Sarah Lichtenstein, then at Decision
Research in Eugene, Ore., a center for decision-making research, college students who expressed 100 percent certainty in their answers were still wrong roughly one time out of every five. In a 1981 study, when doctors diagnosed their patients as suffering from pneumonia, predictions made with 88 percent confidence turned out to be right only 20 percent of the time, according to Jay Christensen-Szalanski of the University of Iowa and James B. Bushyhead of Minor & James Medical, a group practice in Seattle.

What Goes Wrong?

A wide variety of psychological mechanisms underlie these flawed self-assessments, and it would be difficult, if not impossible, to catalogue them all in a single article. Yet if we confine ourselves to two of the most widely documented biases—above-average effects and the overprediction of desirable events—we can describe two general underlying themes. The first is that people typically do not possess all the information required to reach reliably accurate self-assessments. Too many factors are unknown, unknowable or even undefinable for people to make accurate evaluations of self-performance or forecasts about how they will act in the future. Second, in those cases where valuable information that would help guide toward appropriate self-evaluations is in hand, people often neglect that information or give it too little weight, thus leading them toward error.

Consider, first, the above-average effect. People often do not have the knowledge and expertise necessary to adequately assess how their competence stacks up against that of their colleagues—and the most incompetent are frequently the most prone to err in their personal judgment. Incompetent individuals suffer a double curse: their deficits cause them to make errors and also prevent them from recognizing what makes their decisions erroneous and the choices of others superior.

Several studies have now demonstrated that incompetent individuals fail to show much insight into their deficiencies. College students scoring in the bottom 25 percent on a course test routinely walked out of the exam room thinking they had outperformed a majority of their peers, according to a study by one of us (Dunning), Justin Kruger
Playing Doctor

Flawed self-assessment makes people unrealistically optimistic about their own health risks versus those of others. Guided by mistaken but seemingly plausible theories of health and disease, poor health decisions can have severe consequences for individuals’ well-being and longevity.

When people feel that they are relatively invulnerable to flu, they are less likely to think about obtaining a flu shot. Those who believe their chances of being affected are lower than that of their peers are more likely to engage in high-risk sex and less likely to use contraception. Some patients suffering from high blood pressure believe they can tell when their pressure is high and so take their medication accordingly, even though there are no actual symptoms that indicate when pressure is high or low. And so they should take their medication as prescribed and without fail.

Two techniques reduce such unrealistic optimism. One is personalized feedback. In a 1995 study Matthew Kreuter of Saint Louis University and Victor Strecher of the University of Michigan at Ann Arbor, asked patients to complete a questionnaire about their perceived and actual risk of 10-year mortality from heart attack and stroke. To measure the perceptions, the researchers asked patients to rate their degree of risk (“higher than others,” “average” and so on). Actual risk was assessed with questions about age, height, weight, blood pressure and other factors. Risk-estimation algorithms then calculated each patient’s actual risks. Two to four weeks after completing the baseline questionnaire, participants received mailed feedback about their actual risk compared with that of others of the same age and sex. Six months later results from a follow-up questionnaire indicated that patients who were initially unrealistically optimistic about stroke risk had become more realistic after the receipt of personal risk information. Personalized risk feedback thus may be helpful when there is direct contact with the individual, as when a patient visits a doctor.

The second technique targets the motivational basis of unrealistic optimism. Confront people with bad risk information, and they will defend their worldview against the data. Yet if their sense of self-worth is bolstered before they encounter that information, they become more willing to accept it and to change behavior. In a 2000 experiment by David Sherman, Leif Nelson and Claude Steele, all then at Stanford University, college students who wrote about a personally important value (such as how much they cared about friends and family) before viewing an AIDS awareness film were more affected by the message. Relative to a control group, they viewed themselves as more in danger and took a greater number of condoms as they left the laboratory.

—D.D., C.H. and J.M.S.

and Kerri L. Johnson, both at New York University, along with Joyce Ehrlinger of Cornell University. In a 2001 study at the University of Toronto by Brian D. Hodges and Glenn Regehr, medical students mishandling a mock interview with a patient rated their interviewing skills much higher than their instructors did.

In addition, missing information feeds overprediction of good performance. By definition, people are not aware of solutions they could have generated but missed—that is, their errors of omission. For example, suppose we asked you to make as many English words as you can from the letters constituting the word “spontaneous” (“tan,” “neon,” “pants” and so on), and you find 50. Whether this number is good or bad depends, in part, on how many words can actually be found in “spontaneous,” and it is difficult to expect anyone to have an accurate intuition of what that figure is. In fact, the letters in “spontaneous” can spell more than 1,300 English words.

In the absence of complete feedback, people can harbor inflated views about the wisdom of their actions. Suppose an office manager takes a poorly performing employee aside and chews him out. The next day that employee does better—providing evidence for the sagacity of the office manager’s intervention. Yet the manager does not know what might have been achieved by other alternatives, such as sitting down with the employee for a sympathetic talk or even doing nothing. Maybe these alternatives would have
worked as well, or even better, but the manager
will never know.

Perhaps most fundamentally, success in cer-
tain spheres is harder to define than in others. As
a consequence, people regularly believe them-
selves to be above average on traits that are ill de-
efined but not on ones whose definition is narrower.
For example, as Dunning, Judith A. Meyerowitz
and Amy D. Holzberg, then all at Cornell, found
in 1989, people may say that they are more so-
plicated, idealistic and disciplined than their
peers (ambiguous traits, all) but not that they are
any more neat, athletic and punctual (traits that
are more constrained in their meaning).

Although humans naturally like to see how
they stack up, people also misjudge their skills in
relation to others by ignoring crucial information.
or by focusing exclusively on themselves. When
evaluating their skill vis-à-vis their peers, indi-
viduals are egocentric, thinking primarily of
their own behaviors and attributes and ignoring
those of others, according to Kruger. Thus, peo-
ple’s comparative judgments often paradoxically
involve very little actual comparison. Ask them
how well they can ride a bicycle compared with
other cyclists, and they say they do so quite
well—mostly dwelling on how they have no trou-
ble riding but forgetting that others have no dif-
culty, either. But ask them about their juggling
ability, and they describe themselves as worse
than average—neglecting again that others are
also lousy jugglers.

This egocentrism leads people to make irra-
tional choices. College students, for example,
prefer to compete with others in a trivia contest
focusing on Adam Sandler movies (an easy sub-
ject for them) than to compete in one on 19th-
century French painting (a hard topic), forgetting
that what is easy or difficult for them probably
would be equally easy or difficult for their com-
petitors. People bet more in poker games with a
large number of wild cards in the deck because
they are more likely to have a strong hand. But
wild cards do not play favorites, and other play-
ers are equally advantaged as the number of wild
cards expands.

Mispredictions of the future, usually overop-
timistic ones, also arise because people do not
have all the information they need to make more
accurate forecasts. But more than that: individu-
als often cannot hope to have all the information
they need—and thus they should proceed with
cautions whenever making a prediction about
their future behavior. If someone walked up to
you on the street to ask you to donate money to a
charity, would you do it? Your actual behavior
depends on any number of situational features

People also misjudge their skills in relation
to others by ignoring crucial information.

you are not in a position to know until you are
actually in the moment. Does the person asking
look meek or menacing? Do you have time, or are
you late to an appointment? Is it sunny or rain-
ing? Do you have any small bills in your pocket?
Is the charity one you respect? Any of these de-
tails can influence whether you give or not, but
you do not know which details will turn out to be
true until you finally face the situation for real.
People make overly confident predictions about
their future behavior, because they fail to correct
for the fact that such important details of future
situations are often unknown or unpredictable.

People may also have difficulty predicting
how they will respond to circumstances that have
significant emotional or visceral components. For
example, office workers approached just after
lunch predict that the next week at 4 P.M. they
would prefer to receive a junk food, such as an
apple, rather than some unhealthy snack, even
though they know (intellectually) that they tend
to be hungry late in the afternoon. When next
week arrives, they in reality tend to prefer the
calorie-laden junk food over the healthy fruit that
they predicted they would want, as reported in
1998 by Daniel Read of the London School of
Economics and Political Science and Barbara van
Leeuwen, then at Leeds University Business
School. In short, men and women fail to ade-

(The Authors)

DAVID DUNNING, CHIP HEATH and JERRY M. SULS wish they had the gift
of perfect self-assessment. Dunning is professor of psychology at Cornell
University. Heath is professor of organization behavior at the Stanford
Graduate School of Business. Suls is professor of psychology at the Uni-
versity of Iowa. This article is adapted from a more comprehensive techni-
cal report published in Psychological Science in the Public Interest [see
“Further Reading,” on page 27].
adequately anticipate how emotional or visceral factors (such as hunger) will influence their behavior if they are not feeling those factors at the moment they make their predictions. Thus, when they are in a “cold” (logical) state, they mispredict how they will react when in a “hot” (emotional or visceral) state.

Getting the Picture

Can we get a better perspective on ourselves? One general solution is to consciously take what is called the “outside view” rather than an “inside” one. People adopting an inside view focus on the “internal” dynamics of a situation as well as their own personal dynamics and then spin a story of what they are likely to do or accomplish in a given situation. Adopting an outside view means setting aside storytelling and focusing instead on data. When predicting what they are likely to do in the future, they should simply ask themselves what they have tended to do in the past, as well as take into account up what has happened to others who have faced similar situations. For example, in one study students were asked to estimate when they would complete an academic task, and they guessed that they would complete it about four days in advance of the deadline (a goal that only about 30 percent achieved). Yet when asked when they had typically accomplished such tasks in the past, they admitted that they usually finished only one day before the deadline—and this time frame turned out to hold true for the project they were predicting.

Aside from fine-tuning reviews, corporations can build in fail-safe measures to make up for overconfident employees. For instance, software developers often underestimate how long it will take them to deliver new software. Microsoft, thus, automatically builds in a 30 to 50 percent additional buffer time. Microsoft also helps developers assess their own self-knowledge by breaking a complicated project into concrete, manageable chunks. In a 1995 study by Michael Cusumano of the Massachusetts Institute of Technology and Richard Selby, then at the University of California, Irvine, one manager explains: “The classic example is you ask a developer how long it will take him to do something, and he’ll say a month, because a month equals an infinite amount of time. And you say, ‘Okay, a month has 22 working days in it. What are the 22 things you’re going
to do during those 22 days? And the guy will say, ‘Oh, well, maybe it will take two months.’ Even by breaking it down into 22 tasks, he realizes, ‘Oh, it’s a lot harder than I thought.’

CEOs illustrate the problems of overconfidence in the starkest form. Sitting at the top of a hierarchy, they have fewer checks on their decisions and face fewer organizational repairs. The problem is particularly acute in acquisitions, where one firm pays to take control of another. Between 1976 and 1990 premiums to acquire firms averaged 41 percent, with many over 100 percent. Implicitly, the acquirers were claiming that they could manage the acquired firm at least 41 percent better than its current management. External observers rarely shared this level of confidence. When most acquisitions were announced, the combined stock price of the two firms involved generally fell, indicating the market predicted that the combined corporation would be less healthy than the two firms had been separately. In the long run, acquisitions tended to have lower profitability and returns, and many cases were later resold at a loss. Interestingly, the standard economic “solution”—providing monetary incentives—does not work. CEOs with the biggest financial stakes, as Ulrike Malmendier of Stanford University and Geoffrey Tate of the University of Pennsylvania found in 2003, display the largest effects of flawed self-assessment. Providing incentives to someone who is clueless only ensures that he or she is clueless and committed to an unwise course.

What then? Like their employees, CEOs benefit from an outside perspective, such as from a board of directors. It is also important that outsiders maintain their outsider’s status. Even advisers and consultants may be seduced into taking the insider’s view.

—D.D., C.H. and J.M.S.

Daniel Kahneman of Princeton University described a group of academics working on revising the curriculum of a local school system. When members were asked to predict how long it would take the group to finish the job, the single most pessimistic prediction was about two and a half years. On questioning, one member of the group did concede that, in his extensive experience, it usually took such groups seven years at best to complete their task, if they did it at all. The group ultimately wrapped up its work eight years later.

In sum, a wealth of evidence suggests that people may err substantially when they evaluate their abilities, attributes and future behavior. That said, we feel that the psychological literature has painted only a few brushstrokes of its portrait of the person as self-evaluator—and much more work must be done to fully render it. Perhaps more important, we need to develop a second image—one that depicts what an individual looks like when he or she has achieved an accurate impression of his or her talents, capacities and character. How one retouches the first portrait to create the second is an issue that requires much more theoretical and empirical work.

(Further Reading)