Teaching Current Directions in Psychological Science

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C. Nathan DeWall, University of Kentucky, and renowned textbook author and APS Fellow David G. Myers, Hope College, have teamed up to create a series of Observer *columns aimed at integrating cutting-edge psychological science into the classroom. Each column will offer advice and how-to guidance about teaching a particular area of research or topic in psychological science that has been the focus of an article in the APS journal* Current Directions in Psychological Science. Current Directions *is a peer-reviewed bi-monthly journal featuring reviews by leading experts covering all of scientific psychology and its applications, and allowing readers to stay apprised of important developments across subfields beyond their areas of expertise. Its articles are written to be accessible to non-experts, making them ideally suited for use in the classroom.*

Why Smart People Can Make Not-So-Smart Judgments

by David G. Myers

Stanovich, K. E., West, R. F., & Toplak, M. E. (2013). Myside bias, rational thinking, and intelligence. *Current Directions in Psychological Science*, *22*, 259–264.

"In creating these problems, we didn't set out to fool people. All our problems fooled us, too."

-Amos Tversky (1985)

Say this for traditional intelligence tests: They are impressively reliable. And they do a reasonably good job of predicting success in school and in vocations that demand general mental ability (Deary, Whalley, & Starr, 2009; Schmidt & Hunter, 2004).

Yet, as APS Fellow Keith Stanovich of the University of Toronto has dedicated much of his career to documenting: even smart people sometimes display surprisingly bad or biased judgments. Indeed, his astonishing (and astonishingly consistent) finding is that *intelligence* and *rational thinking* are often minimally related. High intelligence does not guarantee good real-world decision-making.

Examples of human irrationality, even among bright people, are amply described in Kahneman's (2011), *Thinking, Fast and Slow*. They will also be familiar to teachers and students of psychology. Recall:

- *The overconfidence phenomenon* (the tendency to be more confident than correct).
- *The framing effect* (the effect of how a question or issue is posed — as when people are more accepting of a surgery with a 95 percent survival than a 5 percent death rate).
- *The discounting of base-rate information* (and favoring anecdotal information) when making social judgments.

- *The availability heuristic* (estimating the likelihood of events based on how readily examples, such as of plane crashes, come to mind).

- *Illusory correlations* (perceiving associations where none exist).

- *Illusions of control* (presuming that one's behavior can control chance events).

- *Perceiving order in random sequences* (attributing causal explanations to random "hot streaks" in sports and investing).

- *Belief perseverance* (clinging to an initial belief and the reasons it might be true, even after the discrediting of the original basis for the belief).

- *Hindsight bias* (overestimating, after an event, one's ability to have foreseen it).

- *Self-serving bias* (the tendency to perceive oneself favorably).

- *Mood effects on memories and judgments* (our moods color how we recall and judge the world).

- *Ingroup bias* (the tendency to favor and perceive virtue in one's group).

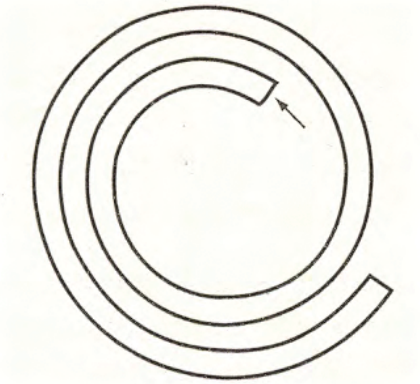
Moreover, to this incomplete list, Stanovich, and researchers West, and Toplak add another: a pesky *myside bias* — a type of confirmation bias that leads us to seek and favor perspectives that are sympathetic to our own. Thus, in one of their experiments, American students were much more likely to favor banning an accident-prone German car from American roads than a comparable American car from German roads. We make moral judgments with a *myside bias* (and, once again, our vulnerability to the bias is unrelated to our verbal ability).

Such "dysrationalia," says Stanovich (2009), can lead smart people into thinking and doing foolish things — to resist vaccinating their children, to fear flying, to try quack remedies, to make bad investments, to overconfidently launch wars. That's because virtually all these biases are like perceptual illusions: they are but modestly restrained by general mental ability. Stanovich's point — that *intelligence tests simply don't assess much of the rationality that facilitates everyday wisdom* — is a take-home message worthy of any introductory psychology course.

While Stanovich and his colleagues continue with their efforts to train people to think smarter, and to construct an RQ (rationality quotient) test to complement existing IQ tests, psychology instructors can enable students to use class demonstrations that help students experience and appreciate dysrationalia. In addition to demonstrations of most of these biases (found in instructors' manuals, and at tinyurl.com/JonMuellerDemos), here are some other simple and fun demonstrations of dysrationalia:

APS Fellow Michael McCloskey's (1983) studies of "naïve physics" invited smart Johns Hopkins students to answer these two questions (which David Myers adapted in his book *Intuition: Its Powers and Perils*):

1) The diagram shows a curved tube, lying flat on a table. A BB is shot into the opening and out the other end. With your finger on the page, draw the BB's path through the tube and after it shoots out the tube.



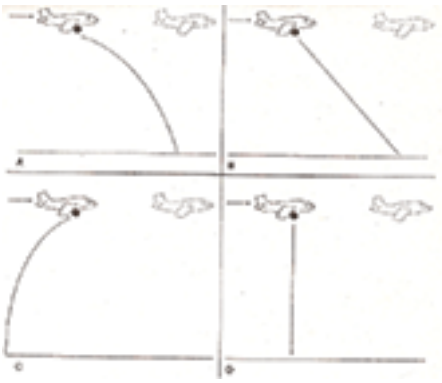
2) While flying at a constant speed, a plane drops a bowling ball. Draw the path the ball will follow (ignoring wind resistance) and show where the plane will be as the ball hits the ground. If a BB were dropped at the same time as the bowling ball, which would hit the ground first?

3) Or how about some simple arithmetic? Here's one that, in Dave's experience, most students miss (but more often get right after animated debate in small groups): A farmer bought a horse for $60 and sold it for $70. Then the farmer bought the horse back for $80 and sold it again, for $90. How much money did the farmer make on this horse trading?

Answers:

1) The BB exits in a straight line. Nearly half of McCloskey's university students expected the BB would honor the curve. (Imagine watering your garden with a hose whose water honored the hose's coil!)

2) The ball falls in a forward arc (a, below), as only 40 percent of McCloskey's students anticipated.



3) Most people say $10 is the answer. However, the farmer actually made $20, as should be evident if people will make a simple table of money spent and received. Or reread the question with this second sentence: "Then the farmer bought some bricks for $80 and sold them for $90." (Should it matter whether the second deal was bricks or a horse?) If still unconvinced, tell students to get out some Monopoly money, go through the transactions, and see how much they profit.

The bottom line: Thinking about thinking can help us think smarter. And besides, it's just plain fun.

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