

Cognitive Biases

Below is a list of common cognitive biases.¹ There are more biases besides these (see <http://www.scribd.com/doc/30548590/Cognitive-Biases-A-Visual-Study-Guide>). But these I think are the most interesting and important. To help organize this material, I have grouped them by their primary cause: Ego Protection, Wish Fulfillment, and Laziness. (Though often, a bias is caused by more than one of these.)

1. Ego Protection

Many times, biases are caused by a desire to feel validated or important, or to avoid shame/guilt.

Self-serving bias – perceiving oneself responsible for desirable outcomes but not responsible for undesirable ones.

Amparo: I worked really hard and earned an A!
Craig: Well that damn teacher hates me; she stuck me with a D+.

Overconfidence effect – excessive confidence in one's own answers to questions. For example, for certain types of questions, answers that people rate as “99% certain” turn out to be wrong 40% of the time. Example:

I bought a pencil and a pencil sharpener for \$1.10. The sharpener was \$1 more than the pencil. How much was the pencil?²

False consensus effect – tendency for people to overestimate the degree to which people agree with them. (This probably feeds into the overconfidence effect.)

“Everybody knows that Obama is a communist.”

Illusory superiority – overestimating one's desirable qualities, and underestimating undesirable qualities, relative to other people. (Also known as “Lake Wobegon effect,” “better-than-average effect,” or “superiority bias”). But see also “worse-than-average effect” below.

The Dunning–Kruger effect is a special case of illusory superiority. It is an effect in which incompetent people fail to realize they are incompetent, because they lack the skill to distinguish between competence and incompetence. (!)

¹ This handout is partly based on information from Wikipedia, though I have edited/added to it.

² It's not 10¢. If it were, then the sharpener is \$1, and the difference in price would be $\$1 - 10¢ = 90¢$. The right answer is 5¢: That makes the sharpener \$1.05, so that the difference in price is \$1.

“In tests on logic, grammar, and humor, participants scoring in the 12th percentile estimated themselves to be in the 62nd. Conversely, those with the highest scores underestimated their performance in comparison to others.”

So in addition: Actual competence may *weaken* self-confidence—competent individuals may falsely assume that others are at least as competent as themselves! Kruger and Dunning: “the miscalibration of the incompetent stems from an error about the self, whereas the miscalibration of the highly competent stems from an error about others.”

Worse-than-average effect: the tendency to believe ourselves to be worse than others at difficult tasks. Usually, this is to pre-empt failure from harming our self-esteem.

Student to Teacher, after 2 weeks of logic class: “This class is hard—I suck at logic!”

2. Wish Fulfillment

People are often biased toward beliefs about how they want the world to be—usually to make the world seem less senseless or meaningless.

Just-world hypothesis – the tendency for people to want to believe that the world is fundamentally just, which causes rationalizations of injustice as something deserved by the victim(s).

The rape victim was asking for it; she should not have worn that short skirt.

Apophenia – the tendency to see meaningful patterns or connections in random or meaningless data.

That near car accident was the Universe telling me that I should stop cheating on my girlfriend.

Forer or Barnum effect – individuals tend to give high accuracy ratings to descriptions of their personality that supposedly are tailored for them, but are in fact general enough to apply to a wide range of people. This may explain the popularity of beliefs and practices such as astrology, fortune telling, graphology, and some types of personality tests.

“You didn’t really fit in as a child. You liked school alright, but you were easily distracted and paid more attention to your peers (even though sometimes you preferred your own company). As you got older, you started to take school more seriously, but you knew you still lacked some discipline. Beware: This lack of discipline will soon cause serious financial problems.”

3. Laziness

Often people use “shortcuts” in their thinking, making them less reliable.

Anchoring effect – tendency to focus too heavily on the first or first vivid piece of information (the “anchor”) when making decisions. (Think “first impressions”)

“I knew from the start that the kid was guilty” –Juror 3 in 12 Angry Men

Availability heuristic – the tendency to overestimate the likelihood of events with greater “availability” in memory, which can be influenced by how recent the memories are, or how unusual or emotionally charged they may be.

Are there more English words that start with the letter ‘k’ or that have the letter ‘k’ as the third letter? (People tend to incorrectly say the former, since it’s easier to recall words beginning with ‘k’.)

Confirmation bias – the tendency to search for or interpret information in a way that confirms one’s preconceptions. The clearest example is “cherry picking,” where you focus on the evidence that favors your prejudices, and simply ignore counter-evidence.

Outcome bias – the tendency to judge a decision by its eventual outcome, instead of based on the quality of the decision at the time it was made. Sportscasters exhibit this bias frequently:

“That was brilliant play by LeBron, a hook shot over three defenders!” vs. “That hook shot was just selfish; LeBron had three defenders on him, and there was plenty of time left on the shot clock.”

Irrational escalation or “Sunk Cost Fallacy”. Phenomenon where people justify increased investment in a decision, based on the cumulative prior investment, despite new evidence suggesting that the decision was probably wrong. (*Remember our in-class auction for \$20.*)

Rhyme as reason effect: People tend to give more credence to statements that rhyme:

“What sobriety conceals, alcohol reveals” was judged more accurate by one group, compared to a second group’s assessment of “What sobriety conceals, alcohol unmasks”

Reactive devaluation is a cognitive bias that occurs when a proposal is devalued if it appears to originate from an antagonist.

Stillinger et al. (1991) asked pedestrians whether they would support a drastic nuclear arms reduction program. If they were told the proposal came from President Reagan, 90 percent said it would be favorable or even-handed to the United States; but, if told it came from Gorbachev only 44 percent said this.

4. A “Meta-Bias”

Bias blind spot – the tendency to see oneself as less biased than other people, or to see oneself as having less cognitive biases than others.

Note: Studies shows that smarter, educated people are **more** prone to this bias! *Don't let your knowledge of the biases create a bias blind spot!*

5. Other Biases covered by Santos

The videos Laurie Santos cover many other kinds of cognitive biases. See:

<https://www.youtube.com/playlist?list=PL0q113zKRdt4oJHJxEtGWgsiad1exWCcJ>.

Use the rest of this handout for notes on the biases that she covers. (Any of these biases are fair game for the first exam.) Note that many biases she covers might *not* be caused primarily by ego protection, wishful thinking, or laziness. What else might explain some of these biases?

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