

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 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!*

What is the Ideal Setting for Inquiry?

“The function of education...is to teach one to think intensively and to think critically”

—Martin Luther King Jr., “The Purpose of Education,” 1947.

Question: How often do you change your mind because of someone else’s argument?

If you’re like most people, the answer is probably “rarely, if ever.” *But that’s weird, right?* On reflection, you’re willing to admit that you don’t have all the answers, and that other people know things you don’t. So why is changing your mind so rare?

The answer, I think, is that intellectual discussions *very often* occur under bad circumstances, where peoples’ emotions are riled up, and rationality is foiled. But what exactly is the ideal setting for discussion?

Well, having learned about biases, it seems an ideal psychological “environment” for inquiry is one where *no one’s ego is threatened, wishful thinking is rejected, and laziness is stomped out.* Yet how does one create such a setting?

1. Preventing wishful thinking and laziness

Since I’m not a professional psychologist, I can’t say too much about how best to root out wishful thinking or laziness. It actually can be a complex psychological affair.

But let me just say this. **BE HARDCORE.** Have the courage to face reality, avoiding wishful thinking. Be honest and know when you are fooling yourself or just going for easy answers. Have the passion to get the facts straight, to figure things out carefully, without taking shortcuts. Be *fuckin hardcore*, dammit.

“Ah, wisdom is sharper than death and only the brave can love her.”

—George Santayana, *Obiter Scripta*, 1936.

2. Preventing threats to the ego.

Since ego protection causes many biases, it is crucial that no one feels at risk. This means (a) not threatening anyone else’s ego, and (b) not feeling like your own ego is threatened.

Strive for (a) by being respectful and courteous (obviously), and by being charitable to what people say. (A good way to insult someone is to commit the strawman fallacy against them...) Above all, avoid an aggressive tone. Make clear that your goal is not to “win” the dispute, but rather to *collaborate in a mutual endeavor to seek the truth.*

One can convey this attitude by active listening. “Active listening” means not only paying close attention to others, but also *repeating* what is said to check your

understanding (and to show that you are listening). If at all possible, also *find the grain of truth* in what they are saying. This conveys that you are open to learning from them. (And once people see this in you, they sometimes naturally reciprocate.)

If you sense that someone is starting to feel threatened, you can counteract it by *complimenting* the person when s/he makes a good argument or notices something you hadn't. You can also give reassuring nonverbal cues (e.g., nodding in an affirming way), even if you disagree on the issues. It shows that you at least understand where they are coming from, and that you see them foremost as a fellow human being. Also, humor is good for relieving tension.

Another strategy is using non-confrontational language. For example, try raising counterpoints in the form of *questions*. Rather than "You're wrong because of X, Y, and Z," say instead "Given your point of view, I'm curious...what you think of X, Y, and Z?"

I don't mean to suggest that you should be spineless or not stick up for what you believe. These are just tricks so that the discussion does not escalate into a crude and useless battle of wills (where opinions get entrenched and no one changes their mind).

If you are still worried about appearing weak, I might note that you gain *more credibility* and are *more persuasive* if you proceed in a calm, non-threatening, and empathetic manner. (It's a Jedi mind-trick where you paradoxically *gain* authority by *letting go* authority.) The attitude shows you have *control* over your emotions, that you are more concerned with the *truth* than bolstering your own ego, and that you want *reason* guide your remarks rather than irrational psychological forces.

I admit, sometimes (a) is not feasible. Sometimes a person is just too aggressive or ego-driven to engage in a reasoned discussion. However, I find that following the steps in (a) often makes a dramatic difference. People who initially seem impossible can suddenly become quite co-operative, once they know that their self-worth is not at stake.

Strive for (b) even though it may sound self-centered. It is in fact *essential* that you feel comfortable as well. After all, if you are feeling threatened, you won't be able to give your full attention to the discussion, and you'll be less likely to promote the ideal climate.

If you tend to feel uncomfortable in an intellectual dispute, you are not alone! This is *far* more often the case. (This is not entirely bad: If you experience discomfort, it is easy to sympathize with others who feel the same discomfort.)

Whenever I start feeling apprehensive in a debate, it helps to admit out loud that I may be wrong, or that I don't have all the answers. It often helps diffuse the "competitive" atmosphere—and that usually makes the conversation more fruitful.

You may worry that this makes you seem lacking in “confidence.” But it takes more confidence to admit fallibility than to stubbornly pretend you are infallible. Alas, some people may *interpret* your tasteful modesty as weakness, but that’s their problem. (I am stunned when people interpret pig-headedness as “confidence.”)

“A very popular error: Having the courage of one’s convictions; rather it is a matter of having the courage for an attack on one’s convictions”

—Friedrich Nietzsche, Nachlass (Musarion edition, 159).

“[T]he trouble is that in the modern world the stupid are cocksure while the intelligent are full of doubt.”

—Bertrand Russell, “The Triumph of Stupidity,” 1933.³

I am also less anxious in a discussion if *other people* do not feel threatened. So if I am feeling particularly uncomfortable, I consciously take the steps in part (a) to make *them* feel more at ease. Not only is this a sign of good faith, but it helps calm everyone down.

The Point: Having a productive discussion requires lots of self-awareness and awareness of others’ states of mind.

In sum: Take heed if your emotions are being provoked, and preventing you from thinking clearly. Catch yourself when you resort to thinking in lazy ways. Notice when fear goads you into wishful thinking.

Similarly, notice these things in others. Proceed cautiously if someone else is getting caught up in their emotions. Try to counteract it in the ways mentioned under (a). Call someone out on their laziness. Tell them to be *fuckin hardcore*. And note if someone’s remark smells of wishful thinking. (They may be saying something true, but it’s good to recognize when their judgments are likely to be less reliable.)

“To become a critical thinker is not, in the end, to be the same person you are now, only with better abilities; it is, in an important sense, to become a different person”

—Gerald Nosich, *Forward to Critical Thinking*, R. Paul (ed.), 1990.

³ Also relevant: “*It is the mark of an educated mind to be capable of entertaining a thought without accepting it.*” This is standardly attributed to Aristotle, yet I was unable to find an exact match when searching his works.