

The Psychology of Decision Making

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1 Introduction

This short text is a concise look at the psychology of how human beings make decisions, including how they form their world views and make arguments.

2 Humans are emotional animals with limited knowledge

Human beings are emotional animals driven by innate biological urges and unconscious biases, unprovable assumptions, and irrational psychology. Humans have limited knowledge and understanding of the world, their immediate environment and themselves. Everyone's worldview is subjective, formed by one's finite time and place, culture, education, upbringing, personal experiences, innate personality, and limited sensory abilities.

There is no objectively correct or single way to organize society, govern people or live one's life. Every political ideology, governance and social model is imperfect, limited, and involves trade-offs and unintended consequences. Even when people agree on the desired ends, there often is strong disagreement about the means to get there.

We all make choices in areas where we are not experts, from picking a shampoo from the multitude of options in the store aisle to picking a new doctor. Many from both the American political left and right express strong opinions about critical race theory (CRT) when they do not know what it is and have [distorted perceptions](#) based on the partisan social and news sources they follow. People from both sides of the debates make judgments about vaccines and climate

change without being scientists, much less immunologists and climatologists. University of Oxford scientist and public science literacy expert Dr. Catarina Amorim told me that it is not just people within the religious right who don't understand what is the theory of evolution. She says that many people within the left who say they believe in evolution also have significant misconceptions about it.

Humans are overwhelmed with information

Humans are inundated by emails, social media, 24-7 news coverage, YouTube, and google search results. It's impossible to entirely know which information is reliable and which is unreliable, with people using biased filters to sort the information.

Having too many choices can cause anxiety, prolong the choosing process and sometimes prevent people from choosing. *Analysis paralysis* is a term for what happens when, in the face of too many choices and overthinking, one is unable to make a decision.

Retailers may think that offering customers an abundance of choices will help sales. However, it can have the opposite effect, leading to analysis paralysis where customers decide not to buy anything.

The questions are how people make choices with all this information, and how should they? There are no simple or objective answers to these questions.

3 How People Make Decisions

Princeton University psychologist and Economics Nobel Prize winner Daniel Kahneman and Stanford University psychologist Amos Tversky showed how humans have two methods of making decisions. One is a slow, logical method. The other a quick intuitive-emotional method.

The automatic emotional form of thinking is important. Unconscious decisions involving aesthetic taste and gut reactions inform us. Not all choices are or should be entirely about logic and reason. Quality of life, choosing about where to live and what university to attend, who to marry and what movie to attend require emotional thinking. However, emotional thinking is subjective, full of biases, blind spots and errors. It must be double checked by reason and critical thinking.

Most decisions, including many that we think are come to logically, are made with the unconscious intuitive-emotional method that is riddled with mistakes and cognitive biases. About 95 percent of our decision making is done at the unconscious level. Brain scans have shown that decisions are made unconsciously before we consciously believe we have made a choice.

Further, after making an emotional decision, the slow, logical method will then often come up with a false cover story, giving logical but false reasons why we made the decision. We think we have gone through a logical thought process when we have not.

Kahneman wrote, “If we think that we have reasons for what we believe, that is often a mistake. Our beliefs and our wishes and our hopes are not always anchored in reasons.” Behavior psychologist Susan Weinschenk wrote, “What people tell you is the reason for why they do what they do may not be the actual reason.”

4 Two Ways of Choosing: Maximizers Versus Satisficers

People tend to lean toward one of two styles of making decisions. ‘Maximisers’ want to ensure they get the most out of the choices they make. ‘Satisficers’ have a ‘this is good enough’ approach. Each comes with benefits and drawbacks.

Maximizers usually get the best final results. However, they often put in too much time and effort into making the decision. As they are perfectionists, they often second-guess their choices and are left unsatisfied. They also are motivated to make the perfect choice even when it’s unnecessary and impossible, and their perfectionism and time-wasting frustrate others.

Satisficers is a combination of the words satisfy and suffice. Satisficers are people who prefer to make quick decisions. Instead of the best or perfect choice, they are comfortable with what is acceptable. Unlike maximisers, satisficers don't need or want a lot of options or outside information. They do less research and go with their gut reaction.

Satisficers don’t waste time, but do not make the best choice, and sometimes regret making the choice so quickly.

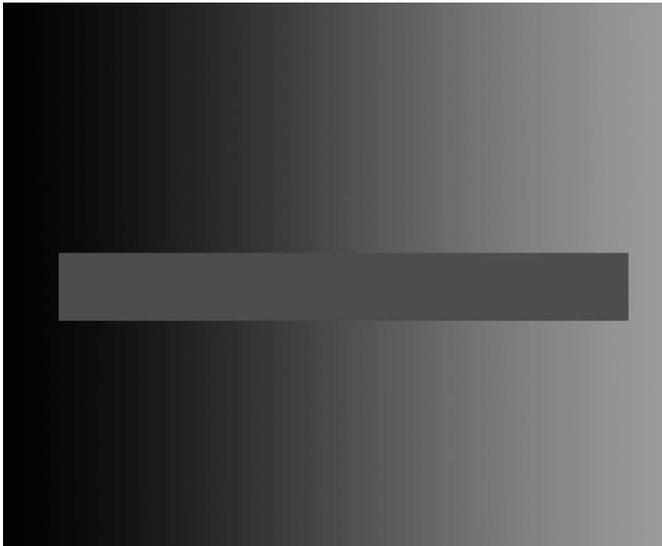
The best method is to combine maximizer and satisficer qualities. One should be a satisficer most of the time, and a maximizer when it is necessary. Maximizing should be reserved for high-

stake situations. This includes picking a new career, buying a house or making a big financial investment. For less significant choices, such as buying a new shampoo or picking a restaurant for lunch, satisficing is usually the best. Psychology professor Barry Schwartz writes, "I think the best general advice is to avoid impulsive decisions *and* to avoid feeling the need to look at every option."

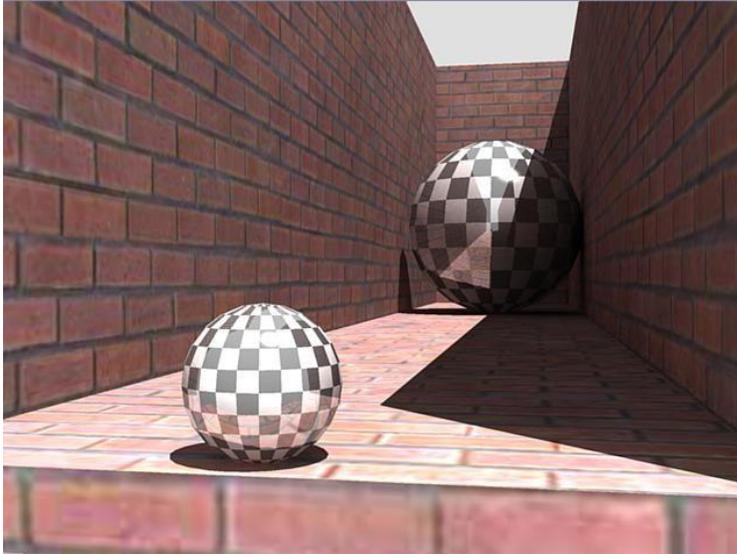
6 Cognitive biases

Humans use cognitive biases and heuristics, or mental shortcuts, to make judgments. These are essential for human function. However, these automatic unconscious guesses have margins of error and often lead to misperceptions and mistakes.

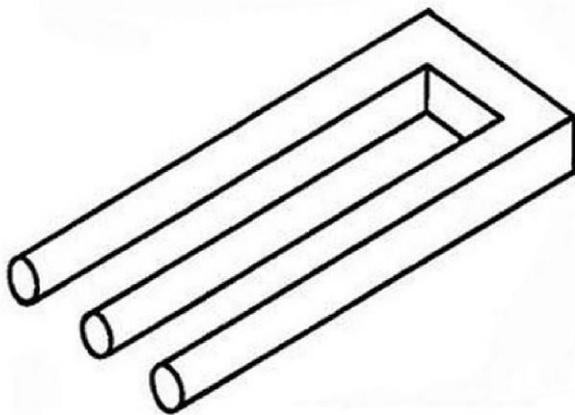
Visual illusions show how these internal methods can produce bizarre misperceptions.



Despite appearance, the horizontal gray bar is one tone. It is the changing background tone that causes the bar to appear to change in tone. To prove this, cover up the surrounding tone and you will see for yourself that the bar is one tone.



Humans judge information by comparing objects and qualities to nearby objects and qualities. These judgments by comparison can be wrong. It is the unconscious misinterpretation of the skewed diminishing scale that make the balls appear to be of different sizes. They are the same size.



The impossible trident visual illusion demonstrates how humans form perceptions by focusing on some information while ignoring other. The viewer forms a perception about the whole from looking at just one end. When she looks at the other end, she realizes her perception was wrong. Unlike some visual illusions where part of the image is blocked and left to the viewer's

imagination, there is no missing information here. The viewer forms the initial perception as if the information is hidden. She automatically mentally hides, or ignores, the information herself.

The following are some standard cognitive biases that distort our judgments. Realize that these are often automatic and unconscious.

Confirmation bias: This is the tendency to search for or interpret information in a way that confirms one's preconceptions, and to ignore or discredit information that does not. An example of confirmation bias includes following only news sources and people on social media that support your views. and avoiding sources with countering views.

Due to confirmation bias, people with opposing views can read the same information and feel that it validates their point of view.

Affinity bias: This is the tendency to be favorably biased towards people most like us. A well-known example is when employers unconsciously favor employee candidates who are most like them.

Anchoring Bias: This is the tendency to be overly influenced by the first piece of information that we hear. For example, the first price offered in a price negotiation typically becomes the anchor from which all further negotiations are based.

Misinformation Effect: This is the tendency for memories of an event to be influenced by things that happened after the event.

Witnesses to a crime may feel their recollection is objectively clear. However, research has shown how their memories are often distorted by later influences. Watching television coverage or hearing others' stories often change how people recall the event. Courtroom eyewitness testimony is fallible.

False Consensus Effect: This is the tendency to overestimate how much other people agree with one's beliefs.

Self-Serving Bias: This is the tendency for people to give themselves credit for success and lay blame on outside causes for failure. When you win at a game you may give yourself the lion's share of credit. When you lose you may blame it on bad luck or bad circumstances.

Availability Bias: This is the tendency to estimate the probability of something happening based on how many examples come to mind. An example is, after reading about airplane crashes in the news, you may believe that plane crashes are more common than they are.

Framing Effect: This is where an individual's choice from a set of options is influenced more by the presentation than the substance of the information. Political ads, propaganda and product sales pitches exploit this bias.

Occam's razor bias: This is the tendency to assume the most obvious or simplest decision or explanation is the best decision.

Apophenia: This is the tendency to perceive meaningful connections between unrelated things. Science writer Michael Shermer coined the word *patternicity*, defining it as "the tendency to find meaningful patterns in meaningless noise." This is a common cause of conspiracy theories. Closely related is **pareidolia**. This is seeing patterns in random information, such as seeing animals or faces in clouds.

Dunning-Kruger bias: This is the tendency for unskilled individuals to overestimate their ability, and the tendency for experts to underestimate their ability.

Illusory truth effect: This is the tendency to believe that a statement is true if it is easier to understand or if it has been stated multiple times.

Myside bias: This is the tendency for people to evaluate evidence and test hypotheses in a way that is biased towards their own previous beliefs and opinions.

Bandwagon bias: Related to groupthink, crowd following and herd behavior, this is the tendency to do or believe things because many others do or believe them.

Other side inferiority bias: This is the tendency to believe that one's political and ideological opponents are morally inferior, less intelligent and less well-meaning.

Stereotyping: This is the tendency to see most members of a group as having particular qualities, tastes, ways of thinking, or beliefs. This includes overgeneralizing about a race, sex, nationality, and the members of a religion or political party.

7 Humans hold strong beliefs that they cling to even when proven wrong

Humans stubbornly cling to some beliefs even in the face of countering facts.

Data scientist Imed Bourchika writes, “When some people have already formed beliefs in their minds, these tend to stick and it goes for various topics. Even when faced with facts and logical reasoning, they would persistently push on with their beliefs. In fact, social media was weaponized due to this behavior, with a number of PR firms driving narratives that highlight propaganda rather than facts.”

Jerry Coyne, a University of Chicago evolutionary biologist and author of the book *Faith Versus Fact*, writes that many humans don’t want the truth, as its often discomfoting. He says presenting facts doesn’t convince many people to give up their false but strongly held beliefs.

Skepticism and rejection of science exists within both the far left and far right. This usually happens where scientific facts oppose people’s closely held ideological beliefs. Science skepticism in the far right is commonly associated with creationism and climate change denial. Areas of science rejection in the far left include being anti-GMO and anti-nuclear and rejecting scientific knowledge that conflicts with postmodernist social justice ideologies.

We all have personal ideologies. The problem is when they become dogma impervious to facts. The secular can be as dogmatic as the religious. We often say we are open minded when we have areas where we are not.

8 Logical Fallacies

Commonly used in political debates, propaganda and other attempts at persuasion, a logical fallacy is a flawed, deceptive and/or false argument that can be proven wrong with reasoning. Productive debates and discussions should not allow logical fallacies.

The following are some common logical fallacies:

Ad hominem argument: This involves arguing against the person making the argument rather than addressing the person’s argument. This can include personal insults, such as criticizing the

person's physical appearance or the way they talk, the organization they belong to or past personal mistakes. In politics it's called mudslinging.

Strawman argument: This is when someone attacks a distortion of the original argument that they created themselves (the "strawman").

False dichotomy argument: This is when limited options are presented, often two extreme cases, when there are more possibilities. This is a manipulative tool, promoting one side while demonizing the other.

Slippery slope argument: This involves taking an argument from the first, sensible premise to a highly unlikely and extreme conclusion through several hastily constructed steps.

Hasty generalization: This is a broad claim based on a few examples rather than substantial proof. An example is generalizing about a group based on just a few extreme or fringe members.

Red herring: This involves bringing up an irrelevant issue to redirect or confuse the discussion to avoid the original topic.

Bandwagon fallacy: This is where something is assumed to be true or good because others agree with it.

Causal fallacy: This is when an argument incorrectly concludes that a cause is related to an effect. A common saying of scientists is "Correlation is not proof of causation."

Guilt by association: Often used as an ad hominem attack, this is when someone is painted as guilty or bad because of their association with an offender or someone bad. An example is when someone is the brother or co-worker or shares one political position with someone who is deemed bad, that person, without other evidence, is deemed similarly bad.

Appeal to pity: This involves provoking emotions instead of using factual evidence to win an argument. An example is when a defendant in a trial uses crutches to try to gain sympathy from the jury.

Appeal to nature: This occurs when something is claimed to be good because it's perceived as natural, or bad because it's perceived as unnatural. Whether or not something is natural does not determine that it is good or bad. Cancer and polio are natural. Similarly, **appeals to tradition**

and **appeal to novelty or newness** are where things are deemed good or bad simply because they are traditional or new.

9 Why people make logical fallacy arguments

One reason people use logical fallacies is because they use poor reasoning, and do not understand how logical fallacies are flawed.

Another reason people used logical fallacies is because they work. We all at times use logical fallacies and play on people's cognitive biases and emotions to try to persuade people. We ourselves at times fall prey to faulty arguments. Remember that most of our decision-making is made at the irrational level.

Emotions are an essential part of our learning concepts and even acceptance of facts.

Storytelling, playacting, art and metaphors are standard teaching tools. Politicians and advertisers have long known the power of emotions in shaping public opinion. They employ various techniques, such as the use of peer pressure and evoking powerful images and slogans to tap into the unconscious biases of the public. Propaganda and emotional persuasion can lead us to false conclusions and beliefs. The truth is often counterintuitive, and falsehoods can make sense.

University College London neurobiology professor Semir Zeki said that, whether they realize it or not, great [artists are neuroscientists](#). They use techniques-- such as colors, angles and shapes-- to manipulate and influence the audiences' minds.

10 Misperceptions and misrepresentations of population demographics

The product of cognitive biases, logical fallacies and misinformation, a widespread problem is ignorance about groups of people.

The British research and data analysts YouGov showed that Americans tend to greatly overestimate the size of minority groups and underestimate the size of majority groups. Many of the estimates are amazingly off. For example, Jews make up 2 percent of the United States population, while those polled estimated it was 30 percent. Four percent of Americans belong to

a union, but those polled guessed it was 36 percent. Three percent of Americans are gay or lesbian, but people estimated it was 30 percent.

These misperceptions come from people both within and without the group. In fact, people outside the group often have a more accurate perception of the size than those within the group.

Whether race, gender, religion, ethnicity or nationality, any demographic is made up of a diversity of viewpoints, philosophies, personal experiences, and political and social positions. There is a range of views even within each major political party. However, a small and sometimes extreme portion of a group is often misperceived or misrepresented as representing the majority of the group.

For example, progressives make up only 11 percent of the American Democratic Party, yet they are often painted as representing the views of the entire party. This can be because the small group is assertive and vocal. It is also because the Republicans falsely portray the small group as representing the views of the entire party.

Media and entertainment influence public perceptions, for various reasons misreporting, stereotyping, and fixating on specific areas. Science journalist Karen L. Rudd writes, “Flattened discourse, unfortunately, is often an outcome of certain traditions in journalism. I don’t like ‘blaming the journalists’ but there are limits to the medium and over-simplification is one of them.” Twitter and social media often paint a false portrait of a demographic, with most Twitter posts made by a small percentage of users. People often get into political and ideological echo chambers where they are exposed to only one point of view.

Conventional wisdom and widespread ideas about all sorts of subjects can be incorrect, including in science, medicine, society and history. A Pew research poll showed that the general public continues to debate ideas where most scientists agree.

The spiral of silence

Contributing to these misperceptions is a phenomenon called the spiral of silence. Studied by German political scientist Elisabeth Noelle-Neuman, the spiral of silence is where people afraid of social ostracization don’t express views that they feel are in the minority. They sometimes publicly say they agree with majority views that they don’t agree with.

Being socially shunned is a legitimate fear with today's Twitter mobs and call-out and cancel cultures. Illiberalism and censorship don't always come in the form of edicts or rules from authority. They can come via groupthink and crowd following, peer pressure and going along to get along. Self-censorship is censorship.

11 Social influences

Humans are social animals. Our brains have evolved for us to function in societies and groups. We all form our views by the groups we were raised in and belong to, and adopt speech and behavior to fit in. We are all susceptible to peer pressure and group think.

Most people know that they will not fit in with social groups by being entirely candid and honest. We all at times fib and hold our tongue in order not to offend or create controversy. We all at times use less than honest techniques to persuade people, with humans functioning by persuading people and being persuaded.

In areas where we know little, such as legislation or policies about medicine, science or society, we often support an idea or policy simply because that's what our like-minded groups or political party support. We often reject an idea simply because it is proposed by a party or person we disagree with. The social and political groups to which we belong can be useful as a general guide in making choices. However, every group produces both good and bad, correct and false, ideas.

12 Ends justifying the means

We all have desired ends, such as wanting a political, social or economic worldview enacted, or a political party or a political candidate voted in or rejected. We all bend or break our personal rules at times to get what we want. We all use logical fallacies, propaganda and emotional reasoning to persuade people to agree with our positions.

For some, enacting a political or ideological end is so essential that they are willing to censor, act in an authoritarian way, undermine democratic processes, and even imprison and kill dissenters.

Totalitarian states such as Stalin's Soviet Union and Pol Pot's Cambodia are examples.

There is no ironclad rule of when deception, dishonesty and cheating are wrong. In a friendly game of poker or baseball, deception of the opponent is part of the fun. To save a life, deception and rule breaking may be justified. Entire ethics classes are conducted on this topic.

However, it is in this area where things get messed up: Wholesale cheating and corruption, theft, lying, stifling reasonable debate, and undermining democracy and science.

13 Misrepresentations, biases and faulty reasoning create bad decisions

Cognitive biases, logical fallacies, overreliance on emotional reasoning, social tribalism, dogmatic thinking, and misunderstanding of demographics lead to poor decisions at both the personal and largescale levels.

Government and private policies are often based on misperceptions, cognitive distortions, and sometimes flat-out wrong beliefs. Policies about crime prevention, diversity, homelessness and medicine that are driven by ideology or emotions over facts and science have proven counterproductive to the desired cause. Pseudoscientific ideologies about diseases and agriculture have led to widespread preventable deaths. Wars have started over misperceptions and logical fallacies. Misperceptions about demographics can lead to policies intended to benefit of the demographic but that the majority in the demographic don't support.

14 What to do?

First understand that there often are no objective or easy answers, and we always have limited knowledge about any situation or topic. There are usually different legitimate ways of doing things, legitimate different possible choices, and they all are imperfect. In a political debate, it's often a matter of different legitimate priorities, values and approaches, and not that one side is right and the other side is wrong. We make decisions unable to know the outcomes and the inevitable unintended consequences.

Be aware that we all have cognitive biases, make logical fallacies, use emotional reasoning and are susceptible to being fooled by propaganda and emotional persuasion. Aware of this, make sure you take the time to examine our perceptions and decisions using logic, weighing the facts

and getting input from others. Examine the ways you make decisions, realizing that the best way is a happy medium between the maximizer and satisficer approaches.

Listen to and invite diverse viewpoints, including that counter your beliefs. You may not agree with everything your opponents say, but they will give you important ideas, facts and perspectives you have not thought about. There are intelligent, thoughtful and knowledgeable people all along the political and ideological spectrum. At the very least, you will learn to understand and appreciate others' points of view. Whether in business, government or daily life, we interact and work with people of different cultures, politics, religions and life experiences. It's important to work to understand them.

Avoid echo chambers. Social psychologist Jonathan Haidt says that, whether political parties, academic areas of study or non-profit organizations, groupthink that stifles dissent and heterodoxy are "structurally stupid" and will inevitably come to wrong conclusions and make foolish decisions. He says, "Whatever they are doing, it's probably wrong."

Realize that, whether a ethnicity, sex, religion, nationality, or political group, any demographic has a wide diversity of views. Do not overgeneralize or cartoonize your opponents. Realize that many characterizations and generalizations of a demographic are false, and often represent only a small part of the group. You can't make good decisions about or for groups if you don't understand them.

Organize discussion groups where everyone is there to both express their views and to listen to others. A friend and I organized such a group, and the first rule we made was "No logical fallacies."

Learn to question and examine others' and your assumptions, beliefs, and taboos. There should be no sacred cows beyond examination. Questioning is a path to understanding.

Learn and promote the use of critical thinking.