

# Theory of Knowledge Deciding what to Believe

By Leland Beaumont



How do you decide what to [believe](#)? Friends tell you one thing, authorities say something else, and the evidence points in yet another direction. Because we are deluged by a constant flood of information from a wide variety of sources, each of us must evaluate and decide for ourselves what information is reliable and what is not. The theory of knowledge can [guide](#) us in deciding what to believe, what to ignore, what to question, and what we don't know. It separates well-founded beliefs from [assumptions](#), rumors, and myths. Don't be fooled; know how you *know*.

## Definitions

1. How we decide what to believe.
2. Evaluating information.
3. Assessing credibility.

The theory of knowledge provides answers to the important questions: “*How* do you know?”, “How do *you* know?”, and “How do you *know*?”

## Related Terms

The branch of philosophy dedicated to the formal study of the theory of knowledge, including the nature, methods, limitations, and validity of knowledge and belief is known as *epistemology*. *Critical thinking* is the mental discipline of discernment, analysis, and evaluation. It is purposeful and reflective judgment. People who apply an effective theory of knowledge are considered inquisitive, prudent, vigilant, scrupulous, meticulous, and wise. People who lack a theory of knowledge are described as gullible, naïve, green, easily duped, foolish, or a sucker.

[Journalism Standards](#) are the practices used in obtaining and reporting newsworthy events. These practices typically consider the principles of: truthfulness, accuracy, objectivity, impartiality, fairness, and public accountability. Opinions and advertisements are clearly separated from news, excerpts are presented in context, sources are attributed, facts are checked with multiple independent sources, contrasting views are included, and other precautions are taken to increase the reliability of the reports.

## Information Sources

We typically consult a wide variety of information sources to form the many off-hand opinions we arrive at each day. Although much of the information we are exposed to is inconsequential, it is essential to obtain reliable information before making important decisions and choosing your most important and consequential [beliefs](#). A variety of information sources are described below, with a discussion of their reliability, limitations, inaccuracies, errors, and difficulties.

## Evidence



We directly observe the world every day. We can see for ourselves that the sky is blue and the grass is green. We can easily feel that the sun is warm and ice is cold. We can hear dogs bark and birds chirp. Certainly first-hand examination of direct [evidence](#) is the most reliable basis for forming beliefs. People rarely dispute these easily verified matters of fact. Disputed beliefs usually arise when direct evidence is not readily available, incomplete, ambiguous, or is open to a variety of interpretations.

Direct evidence is the only primary source of information, therefore it is the most reliable. However it can still be overlooked, ignored, misunderstood, misrepresented, misinterpreted, discounted, or misapplied. Errors or limitations in observation, measurement, equipment usage, handling, identifying, or storage can all contribute to the unreliability of evidence.

Evidence that challenges strongly-held [beliefs](#) is particularly difficult to accept and interpret fully and accurately. A long list of logical [fallacies](#) and a wide variety of common mental [distortions](#) make it difficult to interpret and apply even the most reliably gathered information and [evidence](#). False or implicit assumptions, [perception sets](#); long-held beliefs, explanations, viewpoints, and theories, unfounded beliefs, denial, deception, ignorance, comprehension limits, ego involvement, arrogance, certainty, interest in a particular outcome, [wishful thinking](#), taboos; limits of inquiry, examination, skepticism, or imagination, and many other mental obstacles can easily distort our interpretation of evidence. Learn to identify and compensate for these errors in thinking and reasoning. Revise your [beliefs](#) and [worldview](#) to accurately include and account for all the evidence.

Opinions run most wild where evidence is least available.

## Experts

When it is inconvenient for us to examine [evidence](#) first-hand, we typically rely on findings from people or published sources recognized as topic experts to form our opinions. A true expert derives authority from the unique information, skill, or talent they command. We rely on secondary information whenever we consult experts. Errors can easily be made in communicating our questions, misunderstanding their explanations, misapplying what they say, or choosing a source unreliable for the topic being investigated. Even reliable experts often differ from other reliable experts on difficult, ambiguous, or unresolved issues. Influential people may be consulted or offer opinions well outside their areas of expertise. A common example of this is when movie stars or other celebrities advocate political positions or speak out on social or technological issues that are

outside their areas of expertise.

To get reliable information ensure the source you are consulting is truly expert in the topic you are investigating. Investigate beyond their formal credentials to understand the basis, scope, and limitations of their expertise as it pertains to your specific topic. Ensure there is a clear understanding of what you are seeking to find out and what the expert is seeking to communicate. Explore and understand the limits of the expert's knowledge along with the sources, scope, application, and relevance of their information.

Experts are rarely independent. Know the affiliations, special interests, and business, social, and family connections of the expert you are consulting. Any of these connections or experiences can influence the expert to provide biased information, either knowingly or unknowingly. As an example, pharmaceutical companies often employ medical doctors. When these doctors provide advice it may appear they are providing a well-rounded opinion on a particular disease, treatment, or symptom when in fact they are simply advocating the particular drug product they are affiliated with. This can happen more subtly if the doctor was a researcher working on some particular disease or developing a particular treatment. Although the doctor is not paid to advocate a solution, his background and affiliations still favor a particular viewpoint.

Sales people collect commissions, financial advisors collect brokerage fees, lawyers bill by the hour, doctors learn from pharmaceutical sales agents, councilors and therapists charge by the session, and religious leaders advocate their particular chosen faith. While each of these professionals may be well intentioned and may have valuable expert knowledge, they also have significant vested interests in advocating a particular solution. You may be the only person who can put your own interests first. Don't abdicate your responsibility to make your own informed decisions; consult a variety of sources before drawing your own conclusion.

## **Authority**

The English language use of the word “[authority](#)” has two very different meanings. One meaning describes *power*—such as the right to control, command, or determine—and the other describes *expertise*—an accepted source of information. A person may gain authority through appointment to a powerful position. This positional power and the accompanying authority is often independent of any expertise or relevant knowledge they may have. Unfortunately this may not prevent them from answering questions, providing information, or offering advice that goes beyond their direct knowledge. A simple example of the problems this can cause is asking the cashier an opinion about a product sold in the store. Although the cashier may have no relevant knowledge, they may go ahead and offer their unfounded opinion as if they are actually expert.

In the mid 1600's when it came to deciding if the earth was the center of the universe, the Pope had the authority but Galileo had the expertise. The Pope got it wrong, and forbid Galileo from ever dissenting. Don't confuse power, title, celebrity, or credentials with expertise or a reliable source of accurate information.

The cautions and limitations described above for an expert are even more relevant for an authority who is relying on positional power rather than expertise. It is often their job to provide biased, partial, or even misleading information.

## **Estimates, Forecasts, and Other Projections**



Estimates, interpolations, extrapolations, statistical results, forecasts, opinions, and conjecture are inherently less accurate and reliable than correctly examined direct, relevant, evidence. Be certain to distinguish these projections from direct evidence. Understand and communicate the limits of the accuracy of these indirect information sources. Understand the types and extent of error introduced by the various methods used to make these projections. Understand, apply, and report this projected information as a range of values or as a statement of probability.

Do not mistake estimates or forecasts for precise and accurate data.

## The Scientific Method

The [scientific method](#) relies on controlled experiments that are carefully designed to disprove a specific *hypothesis*—a tentative explanation or proposition. Full disclosure of the experimental methods used and results obtained allows others to independently replicate experiments and verify results. If a variety of experiments carried out by a number of independent experimenters each fail to disprove the hypothesis, then the hypothesis becomes well accepted and is called a *theory* or *natural law*. This conscientious failure to disprove the theory provides evidence that the theory is correct. A theory can never be proven, it can only fail to be disproved. The extent of the efforts to disprove the theory establish the degree of confidence in the theory. The goal of many theories is to describe the cause for some effect observed in the universe. The [theory of gravity](#) precisely describes apples falling to the earth and the orbits of the moons and planets. It was first proposed by Isaac Newton in 1687. Since then it has never been disproven, although its scope has been clarified and it has been extended and generalized by Einstein's general theory of relativity, published in 1915.

The scientific method is generally accepted as the most reliable way to test a hypothesis.

## Ambiguity

We often face ambiguous information—information that can be reasonably interpreted in several different ways. Did he fail to call me back because he was busy, he forgot, he is plotting against me, or because he is angry with me? We are often quick to resolve this uncertainty in our own minds; we make up an answer and begin to believe it. Our minds insist on completing the story one way or another, often by making unfounded assumptions and speculations. We are prone to make [attribution errors](#) that we soon regard as factual explanations. Partial or fragmented information, rumors, gossip, sound bites, vague

statements, homonyms, garbled or inaudible speech, blurry images, inconsistencies, incongruence, unstructured or incoherent presentations, and fleeting glimpses present uncertainty every day.

Be aware of ambiguity and the assumptions we make to resolve it. Increase your tolerance for ambiguity as you work to resolve it. Become comfortable with complexity as you seek elegance. [Suspend judgment](#), investigate, identify and challenge assumptions, ask questions for clarification, and [get the facts](#) before deciding.

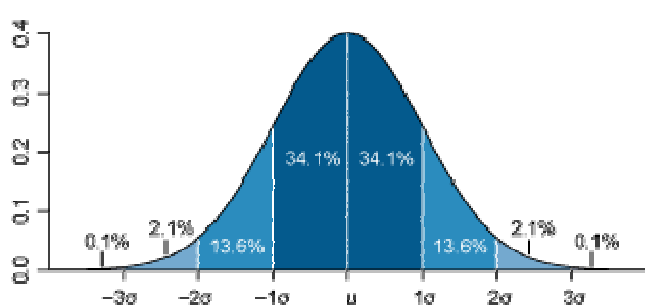
## Anecdotal Evidence

Isolated examples can be cited as evidence for or against any premise, idea, or position. As an example, consider a discussion on the dangers of driving while under the influence of alcohol. One person may tell a story of someone they know who was killed by a drunk driver. Another may boast they have driven home drunk many times and never had an accident. Neither argument advances the discussion or increases understanding; it generates more heat than light.

Dismiss anecdotal evidence in favor of systematic evidence and analysis. In this case it is helpful to cite that the National Highway Traffic Safety Administration's Fatality Analysis Reporting System reported 15,945 alcohol-related highway deaths in 2006 in the United States out of a total of 38,588 fatal crashes.

Superstitions, good luck charms, gambler's rituals, magic spells, and other attempts to change chance outcomes are often justified based on anecdotal evidence. There is no systematic evidence that these rituals have any effect. The justifications are often examples of a [Post hoc ergo propter hoc](#) fallacy or of unfounded [optimism](#), [intentional stance](#), or [magical thinking](#).

## Statistics



Statistics are used to summarize, characterize, analyze, and interpret large collections of data. Statistics and statistical analysis are essential tools for making informed decisions based on systematic evidence. In addition to reporting measures such as the mean, median, and range of variables, specific statements about the accuracy, limits, confidence, and error range can also be made. Statistical analysis begins by identifying a *population* to be studied. A *sample* is then chosen to represent the entire population. For example, to estimate the average height of Caucasian American males aged 25-35, a sample of perhaps a few dozen to a few thousand individuals fitting that description would be selected and the height of each is then measured. The arithmetic mean is then calculated over that sample and reported. In addition, the tallest and shortest measurements could be reported, along with the percentage found to be in particular height ranges.

Statistics provide very powerful techniques for understanding data, however errors can easily occur by mistake or in a deliberate attempt to mislead or deceive. The height example described above can illustrate some of these errors. The sample may not accurately represent the population, or the population may not be accurately described. For example, if the ages of some men in the sample fell outside the range of 25-35 years, or some were not Americans, or they were not chosen at random from the entire population, or some classes of men, such as those who are seriously ill, or disfigured, or dwarfs are

excluded then the actual sample does not accurately represent the population. If the results of this study are used to represent the heights of all men, or men of a different age, or from another part of the world, no valid conclusions can be drawn. If the sample is too small, containing perhaps only 3 men, the results cannot be accurately extrapolated. Several measures of central tendency are commonly used. These are the *mean*, *median*, and *mode*. The statistician or the user of the analysis may misunderstand or misapply the definitions, limitations, and applications of these measures. Many other errors are possible as the application becomes more complex.

When evaluating statistical results it is also important to keep in mind that *correlation does not prove causation*. For example, although salary is positively correlated with body weight, gaining weight does not *cause* salary increases. Very often some not-yet-understood variable is causing the correlation. In this example, as a person gets older both their weight and salary tend to increase.

Statistics provide powerful tools for understanding data. Like all powerful tools they can be used to solve difficult problems, and they can also be dangerously misused, misapplied, or misunderstood. Understand how the statistics were gathered and analyzed before basing your conclusions on them.

## **Influence**

Opinions can easily be swayed, especially if they are not yet fully and carefully formed. [Influence](#)—attaining belief—originates and accumulates from many sources, including: observation, listening, [dialogue](#), suggestion, recommendation, advice, opinion, education, reading, advertisements, indoctrination, propaganda, censorship, counseling, peer pressure, and habits. Most of our experiences are influenced by others. So what we may consider free choice is actually constrained and influenced by the information we are exposed to and believe to be true. Even apparently objective information gathering activities such as unfettered observation are influential because the environment we are observing represents only a tiny fraction of the world. In any observation session you will be seeing some phenomena and not seeing many others. As a result, your conclusions are inherently based on partial information, and may not accurately represent the larger system. Influence is ubiquitous, insidious, and unavoidable. Be aware of the influences that lead to each of your decisions.

## **Power**

[Power](#) increases [influence](#). Powerful people get more opportunities to address larger audiences with their messages. More resources are available to research, present, persuade, and reiterate the message. Audiences are more readily available. They have the resources to dispute or suppress alternative viewpoints and conflicting messages.

But [might](#) does not make right. The sugar water relentlessly promoted by Coke and Pepsi directly contributes to obesity and diabetes. The addictive tobacco products sold around the world directly cause lung cancer and other deadly diseases. Big drug companies and health insurance agencies decide what diseases we are allowed to receive treatment for. As media companies continue to consolidate, *their* message becomes *the only* message we hear. While these powerful organizations continue to promote their harmful and selfish myths, the faint voices of reason are fragmented and more difficult to seek out.

## **What did you say?**

Many of us find particular styles of charismatic language alluring, almost seductive. We are fascinated, almost mesmerized, by the words as pleasant images drift through our minds and sooth our souls. (I admit to being a bit envious.) Unfortunately, scrutinizing the language often reveals it as meaningless, irrelevant, untestable, illogical, or unfounded. As a test, examine a typical persuasive sentence or passage to identify the premise and the conclusion, if either exist. Explicate and analyze the

[syllogism](#). It may be helpful to first restate the passage in your own words. Then examine the premise to understand its foundation and factual basis. Next, examine the logic used to derive the conclusion from the premise. Does the conclusion follow logically from the premise? Is the conclusion accurately stated? Are any logical [fallacies](#), or [distortions](#) being used? Are literal truths being used to send a false message? Is the conclusion helpful?

## Deception

We are deceived whenever we are led to believe something that is not true. This can result from propaganda, distraction, concealment, half-truths, mistakes, gossip, rumors, falsehoods, hoaxes, and lies. Using literal truths to send a false message is a common form of deception. Unrepresentative evidence, statements out of context, unfounded extrapolations or projections, overgeneralization, inaccurate analogies, emotional manipulations, false dichotomies, inaccurate interpretations of facts, censorship, charisma, and threats are common manipulations that can easily deceive us. Much of what we see and hear is inherently deceptive because it is intended to advocate a [single point of view](#) and advance some vested interest. Deception is ubiquitous, and it is our [responsibility](#) to discern the truth.

Don't be gullible. Curiosity and skepticism are our best defenses against deception. Obtain independent opinions from sources representing a variety of interests and viewpoints before making important decisions. Use only reliable sources. Extend [trust](#) cautiously.

## Points of View

Every single viewpoint we are exposed to is [one-sided](#), and therefore inherently biased. Advertisements, infomercials, sales pitches, product descriptions, presentations, preaching, advocating, proselytizing, stock tips, financial advice, healthcare advice, nutritional advice, sermons, movie reviews, résumés, political speeches, press releases, and editorials each present only a single viewpoint intended to advance a special interest. Even media news stories, educational material, books, and websites (including this one) typically present only a limited point of view. Vested interests are ubiquitous and represent only one side of the story. It is our [responsibility](#) to find and understand the other sides of each story. Our understanding is incomplete and unreliable until we can attain and comprehend a [neutral point of view](#) of the topic.



As an example, the website [shuteye.com](#) appears to provide valuable information on overcoming insomnia along with other helpful advice on how to get a good night's sleep. A closer look reveals it is sponsored by “sleep solutions from sanofi-aventis” a drug company that sells sleeping pills. They are selling their product under the pretense of providing public service information. The wolf is wearing sheep's clothing.

How old do you estimate the woman is in the image on the right? If you see a young woman, look again, adopt new viewpoints until you can see the old woman. If you see an old woman, look again to see the young one. Both of these

viewpoints are equally valid, but each is only part of the complete picture. Each of these viewpoints can be correctly and strenuously argued as being correct. It is only when you see them both that you fully understand the image.

The most strongly biased viewpoint in the world is [your own](#). [First-person viewpoint](#) is the fundamental [asymmetry](#) of humanity. Test the validity of your viewpoint by considering equivalent [symmetrical](#) points of view. For example, if you believe that you deserve to go to the front of the line, do you also believe that everyone else in line also deserves to go to the front? If you believe your faith is the true faith, are you willing to believe that other faiths are equally true?

## Somatic Markers

People often base decisions on how they feel, snap judgments, impulses, or intuition. It is certainly faster and easier than analysis, investigation, and deliberation.

## Impairments



It seemed like a good idea at the time, unfortunately I happened to be drunk. Drugs, alcohol, sleep deprivation, fatigue, hunger, medications, pain, addictions, obsessions, stress, excitement, overwork, overload, time pressure, coercion, indoctrination, anger, emotional states, emotional involvement, attachment, aversion, distractions, multitasking, phobias, dizziness, vertigo, trance, disease, and many other conditions impair our perceptions, cognitive abilities, judgment, and memories. Decisions made under these conditions have to be carefully reconsidered with a clear head. I believe I'll reconsider this when I am sober. Sleep on it, the world may look very different to you tomorrow. Choose mindfulness—a full awareness of the present realities—over impairment and distortion.

## Acquaintances

“Lots of my really cool friends smoke cigarettes, so maybe I should start smoking”. Reasoning like this is all too common, even though the factual foundation for the decision is often unknown and may not exist. The fallacy of [circular reasoning](#) is often the only logic being used here. If the circle of friends turn first to each other for guidance, then their information, opinions, and decisions are unanchored by external [evidence](#) or transcendent [values](#). Their ideas and beliefs drift freely without constraint, wandering wherever the group decides to go. Popularity breeds popularity, and popular opinion can breed consensus without any substance, skepticism, critical thinking, or relevant facts. Compliance quickly becomes automatic.

It is not enough to go along with the crowd. Find out where the crowd is going, why they are heading there, and if it is the best direction for you to go, now and in the long term. Listen to others outside the crowd. Carefully choose helpful role



models and mentors. Humans are not sheep; don't go along just to get along. You are a competent, [autonomous adult](#). You are fully [responsible](#) for all your decisions and [beliefs](#). Have the courage to question. Make your own decisions, choose your own [beliefs](#), act congruently with your [values](#).

## The Fragile Wisdom of Crowds

Under certain conditions aggregating information in groups results in decisions that are often better than could have been made by any single member of the group. Criteria that separate wise crowds from irrational ones are:

1. Diversity of opinion—Each person has private information even if it's just their own quirky interpretation of the known facts.
2. Independence—People's opinions aren't determined by the opinions of those around them.
3. Decentralization—People are able to specialize and draw on local knowledge, and
4. Aggregation—Some mechanism exists for turning private judgments into a collective decision while maintaining the required independence of each judgment.

When these conditions are not met, crowds often make very bad decisions.

Keep these distinctions in mind when evaluating decisions made by crowds, including popular opinions and trends.

## Informational Cascade

When we are undecided we often look to others for clues to the right or expected answer. If a vote on a complex or confusing issue is taken sequentially, so that each person sees the vote of the person who preceded them, the first vote cast may influence the next person to vote the same way. As a result the decision of the first voter gets amplified and validated by each subsequent vote. What began as an equivocal issue quickly became a landslide. Informational cascades contribute to trends, fashions, public opinions, crazes, hoarding, and other fads. Beware!

## Analysis and Synthesis

The ancient Greeks believed the universe was composed of only the four [elements](#)—air, water, fire, and earth. This seems entirely reasonable when examined only from a human scale. The land is made of earth, the atmosphere of air, the oceans of water, and the sun of fire. But this idea clearly breaks down when considered from a reductionist (analytical, drill down) view—can these elements be further decomposed? Taking a reductionist view, we now know that air is composed of oxygen, nitrogen, and several other chemical elements. These elements in turn are composed of electrons, protons, and neutrons. These sub-atomic particles are composed of [quarks](#), and the reductionist story may not even end there. The idea also breaks down when considered from a holistic (synthesis, frame up) view—are these elements sufficient to comprise the entire universe? Taking a holistic view, we now know that the sun is made of hydrogen and helium and the heat is generated from nuclear fusion, not fire in the ordinary, earthly, chemical sense. The universe is composed of at least 117 distinct chemical elements and held together by the forces of gravity, electromagnetism, and the strong and weak nuclear forces. The holistic story does not end there because much about the makeup of the universe is still a mystery, including the nature of dark matter and dark energy.

Facts are our friends. When a new viewpoint or new evidence emerges that is inconsistent with your present beliefs, it may be time to rethink and revise those [beliefs](#). Accept and assimilate [what is](#).

Test your beliefs by examining them from a variety of reference frames. What happens when we drill down to a much smaller and more detailed scale? What happens when we frame up to a larger and more comprehensive scale? Test your beliefs by subjecting them to the analysis of reduction and the synthesis of holism. Integrate your beliefs into a coherent whole that is consistent with the broadest collection of evidence.

## Expanding Worldview

Perhaps the ancient Greeks believed that Zeus lived on Mount Olympus and was the king of the gods. Perhaps faithful people could hold onto this quaint belief as long as they stayed close to home. But as people explored more of the world they soon recognized that Mount Olympus is not a particularly large mountain, chariots are not a very wide-spread transport vehicle, and climbing Mount Olympus fails to reveal the home of the gods. As your worldview expands to consider more of the universe, it is likely your beliefs will have to be modified to accommodate this broader expanse of information, experiences, and phenomenon.



Here are examples of how beliefs have evolved to accommodate our expanding knowledge as the scope of our evidence and understanding continues to expand.

- Believers in a flat earth were challenged to revise their thinking centuries ago as sailors circumnavigated the earth.
- Believing the earth is the center of the universe became increasingly unreasonable as astronomers viewed more and more of the universe. Beliefs evolved from the earth at the center of the universe, to the earth as one planet circling the sun.
- As billions of sun-like stars were discovered throughout the universe, we could begin to believe that some of these stars have their own solar systems.
- As planets were discovered circling other stars we could begin to believe that planets are common and their may be billions of them in the universe.
- As we accept the likelihood that billions of planets exist, we can begin to believe that intelligent life exists throughout the universe.

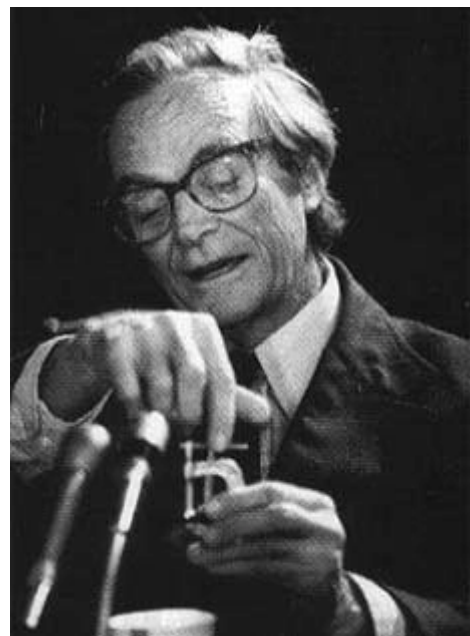
In another example, American's beliefs about freedom and equality have expanded over time.

- When the declaration of independence was signed on July 4, 1776, the bold phrase: “All men are created equal” meant that a few white aristocratic men no longer agreed to obey King George III.
- On November 19, 1863 Abraham Lincoln called for “a new birth of freedom” as he gave his Gettysburg address. This expanded our beliefs in equality to include abolishing slavery.
- When the Nineteenth Amendment to the United States Constitution was ratified in 1920 American women were granted the right to vote. Our belief in the equality of man was expanding to include women.
- The 1954 supreme court decision of *Brown v. Board of Education of Topeka* officially expanded our belief in equality to recognize that “separate educational facilities are inherently unequal.” This paved the way for integration and the Civil Rights Movement.
- On December 1, 1955, Rosa Parks famously tested our actual beliefs in equality for Afro-Americans by refusing to obey bus driver James Blake's order to give up her seat and make room for a white passenger.
- The Civil Rights Act of 1964 was landmark legislation in the United States that outlawed segregation in the US schools and public places. We now officially believed that even more people are created equal.
- The civil rights movement and the women's liberation movement continue their struggles today to encourage the beliefs that all American humans really are created equal.
- The United Nations [Universal Declaration of Human Rights](#), adopted in 1948, declares that “All human beings are born free and equal in [dignity](#) and rights.” This provides international recognition for the belief that all humans really are created equal throughout the world. This simple but profound belief is only beginning to be accepted throughout the world. How long will it take for us all to share this belief?

As your experiences expand, your beliefs have to be deliberately revised to accommodate your expanding worldview. Assimilate new information into your worldview and adjust your worldview to accommodate the new evidence. As your beliefs are revised to accurately accommodate a broader a worldview, it becomes more likely that those beliefs are correct and useful.

Ignorance is often the result of a narrow worldview. This may be a deliberate, desperate, stubborn, or manipulative attempt to hold onto obsolete beliefs or to advance a particular viewpoint. It may also be an unavoidable consequence of the size and scope of the universe compared to the limits of human comprehension. Narrow minds have the most room for expansion. Don't choose to ignore evidence; all of it is a part of *the world as it is* and it often offers vital clues to a broader understanding.

## Skepticism



Hoaxes, practical jokes, myths, legends, rumors, speculation, ambiguity, misunderstandings, mistranslations, misquotations, misrepresentations, censorship, cover ups, disinformation, docudramas, indoctrination, hearsay, magic tricks, clairvoyants, retouched photos, sound bites, edited audio and video, special effects video, gossip, blather, bluffs, bluster, boasts, bullshit, opinions, traditions, proselytizing, assumptions, predictions, and so many more of the communications we see, read, or hear are incorrect, misleading, or deceptive. Overcome your gullibility and approach it all with a healthy and practical [skepticism](#). Satisfy your curiosity; ask questions, probe for answers, investigate improbable stories, follow your hunches, highlight inconsistencies, challenge assumptions, go to the source, and uncover and examine direct evidence. Make your own decisions.

Physicist Richard Feynman's skepticism played an essential role in [investigating the Space Shuttle Challenger disaster](#). His investigation style relied on his own direct methods rather than the commission's carefully controlled presentation schedule. This put him at odds with investigating commission chairman William Rogers, who once commented, "Feynman is becoming a real pain." During a televised hearing, Feynman famously demonstrated how the O-rings became less resilient and subject to seal failures at cold temperatures by immersing a sample of the material in a glass of ice water. This simple demonstration quickly exposed the true causes of the disaster. His skepticism cut through the pretentious façade protecting the status quo and uncovered the truth.

## **Nonfalsifiable Claims**

Many unlikely beliefs endure only because they cannot be disproven. Alien abductions, faith healing, astrology, conspiracy theories, chain letter spells, witchcraft, superstitions, religious dogma, and many other strongly held beliefs are not supported by evidence, yet cannot be disproven. These beliefs are defended by the claim: "I can't prove it true, but you can't prove it false." This challenge seeks to shift the burden of proof from the faithful to the skeptics. Such beliefs, especially an unlikely belief, can be reasonably rejected simply because it lacks evidence.

A reasonable assumption is that "extraordinary claims require extraordinary evidence." Doubt claims unsupported by evidence, but only supported because they cannot be disproven.

## **Focus**

We only see what we focus on. We can only focus on what we are exposed to. If our exposure is limited to a small circle, or similar circles, our evidence is intrinsically incomplete. We don't know what it is that we don't know. We don't even know if it is important. Walk miles in other moccasins before deciding.

## A Partially Closed System

Any Theory of Knowledge can easily become a partially closed system. The principles used to select beliefs will inevitably become reflected in the Theory of Knowledge itself. This tendency can be somewhat counteracted by expanding the scope of the world-view used to construct the theory of knowledge to encompass as broad a range of phenomena as possible.

## Epistemology

[Epistemology](#) is the branch of philosophy concerned with what we can know. It addresses questions such as: “What is knowledge?”, “How is knowledge acquired?”, and “What can people know?” It is the formal study of the theory of knowledge and has provided much of the material presented here. But epistemology also raises several difficult, fundamental, unanswered questions. For example the theory of *radical skepticism* doubts any premise that is used as the basis for further knowledge. This leads to an infinite regress where literally nothing can be known for certain.

While these deep questions are fascinating and may eventually shake the foundation of understanding as we know it, they don't seem to help us make the day-to-day decisions we need to make as we live our lives. Studying and applying the practical suggestions presented on this web page can greatly improve your understanding of the theory of knowledge. This can help you choose [beliefs](#) based on a firm foundation and make better choices every day.

## Responsibility Harnesses Free Speech

The right to free speech is perhaps the most important right ever granted and protected by law. It is an essential element of freedom. One result of free speech is that much of what is written and said is not accurate, complete, or representative. This places the [responsibility](#) on each of us to apply the theory of knowledge to all that we see and hear. We have the responsibility to decide for ourselves what it is we believe. The right of free speech requires a thorough understanding and diligent application of the theory of knowledge. Responsibility harnesses free speech. Don't be fooled, lives literally depend on it.

## Quotations

- “Fool me once, shame on you, fool me twice, shame on me.” ~ Folk wisdom
- “You can fool some of the people all of the time, and all of the people some of the time, but you can not fool all of the people all of the time”. ~ Attributed to Abraham Lincoln
- “Won't get fooled again.” ~ The Who
- “Responsibility harnesses free speech.” ~ Leland R. Beaumont
- “There are three kinds of lies: lies, damned lies, and statistics.” ~ Attributed to Benjamin Disraeli
- “What Do You Care What Other People Think?” ~ Book title, Richard Feynman
- “Man prefers to believe what he prefers to be true.” ~ [Francis Bacon](#)
- “Where fear is present, wisdom cannot be.” ~ [Lactantius](#)
- “Throughout history, those bent on domination have always seen reason as their enemy.” ~ Al Gore

- “Those who stand for nothing fall for anything.” ~ Alex Hamilton
- “Think for yourselves and let others enjoy the privilege to do so too.” ~ Voltaire, in *Essays on Tolerance*
- “When the facts change, I change my mind. What do you do, sir?” ~ John Maynard Keynes

## References

*[A Rulebook for Arguments](#)*, by Anthony Weston

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