Preface

Medical Mythology

Death and illness are a universal source of anxiety and fear and this fear filters into our feelings about every aspect of human life. Our approach to politics, to science, and to the arts, echoes the way that fear of death and our desire to defy its inevitability have shaped our world. Health fears and anxieties play a major role in shaping attitudes about food and nutrition, about our regulation of industry, and our approach to imagining the future. Most directly, fear of death animates our impressions and attitudes about healthcare and medicine. In some cases, fear of illness and death motivates more responsible behaviors or engagement with the medical sciences and techniques, but in other cases fear motivates the embrace of misinformation and misperceptions that can have a devastating impact on health, not just for the ill-informed, but for everyone else living in their societies.

The misinformed in America and around the world are, quite often, victims. They have been misled by issue entrepreneurs (actively promoting a previously neglected issue and advocating for a different perspective than a prevailing viewpoint, often within a political or social context), who prey upon their fears and anxieties in an effort to build their own power and influence. Conspiracy theorists have built lucrative careers selling conspiratorial concepts and ideas through websites and books or as lecturers. Politicians have won elections based largely on espousing baseless conspiracy theories and utilizing propaganda to misinform voters. Francis Bacon, in his famous 1597 *Meditationes Sacrae*, said "*ipsa scientia potestas est*," which is often translated as "knowledge itself is power" and reflected Bacon's belief that the sharing of knowledge empowered all of humanity. But, knowledge is also a difficult thing to gain and to create, and it is a collective activity, not one that belongs to singular individuals.[1] A faster road to immediate power is to misinform, to generate the illusion of knowledge, confirming and marshaling fears and insecurities among audiences. Such a weaver of illusion doesn't need to work hard to learn and inform themselves. They are limited by nothing but their imagination and can thus bluff and lie their way to power, mimicking informed, thoughtful people without putting in the effort to become one of them.

There is a nugget of pseudowisdom that has floated around American popular culture for many years, holding that the most convincing falsehoods are convincing because they are associated with something that is known to be true or demonstrable. Many health conspiracies and mistaken beliefs are embraced because they "sound true" or because they inspire our collective memory of the very real dangers of medicine. Over the centuries, medical science has saved countless thousands of lives, but there have also been missteps. Treatments that were later exposed as quackery, concepts once seen as medical fact that have

been thoroughly disproven. Medicine and our knowledge of human health is constantly evolving and, as it does, theories of the past are sometimes thrown out completely. Health consumers are aware that what scientists believe today may change markedly in the future, and this demonstrable fact is often used to leave the door open for the belief in unproven concepts about health and wellness. Scientists may argue that the COVID-19 vaccines are safe, but do they really know? What will people think of the vaccines in five years? How about in ten? twenty?

The uncertainty of science and medicine is its strength. It is because of this uncertainty that exploration and investigation never stops and that scientists embrace the duty to examine the investigations of the past, to look deeper even into established theories. But, for those without a substantive grasp of how science works, this uncertainty provides the perceived justification for ignoring, denying, or downplaying the importance of scientific consensus and the best available knowledge. Once a person has embraced the idea that the scientific establishment might not have the best knowledge, they may become open to embracing ideas from other sources, ones that might *sound* convincing, but typically lack substantive data or justification. This is the origin of many of the health and medical conspiracies that have shaped American attitudes about health over the years.

Denialism and the Illusion of Arguments

In 2007, Washington University School of Medicine researcher Mark Hoofnagle and Chris Jay Hoofnagle, from the University of California, Berkley School of Law, defined what they called "denialism," as a "the employment of rhetorical tactics to give the appearance of argument or legitimate debate, when in actuality there is none." In simpler terms, denialists do not debate, or present evidence to support a set of beliefs, they simply use techniques that make it appear that they are doing so in an effort to mislead an audience, even if their only audience is themselves. Those who hear denialism may therefore have the impression that they have been presented with arguments supporting a certain view, or refuting another view on an issue, while, in reality, no evidence has been presented, and the denialists have not really made an argument. The simulation of intellectual discourse is a way of misleading audiences while promoting a world view or idea that lacks intellectual justification.

Because denialists are not actually engaging in a debate or arguing a point, but merely making it appear that they are doing so, the Hoofnagle's brothers argue that it is not productive to try and counter denialism with standard rhetorical techniques.

> Part of understanding denialism is knowing that it's futile to argue with them, and giving them yet another forum is unnecessary. They also have the advantage of just being able to make things up and it takes forever to knock down each argument as they're only limited by their imagination while we're limited by things like logic and

1
Early Medical Schemes and Practices

Cover of June 1905 *Collier's* magazine, which contained an exposé of the patent medicine industry. Illustration by E. W. Kemble, via Wikimedia. [Public domain.]

Medical Quackery and the Evolution of Care

Skepticism about the medical industry and medical science is nothing new and, in fact, it has been part of US culture since the very beginning. American culture is a version of British culture and the colonists traveled to American shores carrying a host of dubious medical practices with them. Folk medicine sometimes helped, but often did little, and public trust in the value of their healers was limited. But then came the advance of science, and the discovery of pharmaceuticals, and all sort of chemicals and substances that had healthcare uses. This evolution ultimately made medical care more reliable, but, it also created new dangers.

The loosely democratic free-market governmental system that Americans embraced (not that they were ever given any alternative) was designed by and for sellers and not consumers. It took many decades for public health and welfare advocates to motivate the government into taking any substantive steps towards regulating the medical industry and, by this time, much damage had already been done. Fake medical cures and aids circulated widely depriving the suffering of resources, but doing next to nothing to ease their symptoms. For many years, questionable medical practices were embraced because they provided profit or savings, not because they proved effective at treating illness and this history of profit-driven medical neglect and exploitation also helped to darken the image of medicine in America.

Colonial Cure-alls

Medicine and the wellness industry in America was an evolution of the ancient folk medicine traditions that Americans brought with them from Europe and/or adapted from the Indigenous people of North America. The first "medicine" consisted largely of utilizing botanical materials that one could find in nature. These materials were consumed or applied to the body to address various difficulties. In general, these treatments were what is called "symptomatic" rather than "curative," which means that the treatments offered were meant to address symptoms and not the underlying cause of the illness. This makes sense, as medical science had not yet advanced to the stage where the underlying cause of most illnesses was even known.[1]

Most of the earliest medical aids were part of a practice known as "depletion," where the idea was to remove offending substances from the body. To this end, folk physicians used "purgavies," which are substances that causes a person to emit waste, either through vomiting or through the production of feces or urine. It was believed, at the time, that harmful substances or humors would linger in

the body, causing illness. Many of the "medicines" used were botanicals, like *Sanguinaria canadensis*, or bloodroot, a plant in the poppy family long used to induce vomiting.

When it came to pain and the many diseases that circulated during the time, the botanical derivative of the poppy family known as "opium" became among the most commonly used drugs for many years, even after it was discovered that the drug quickly induced addiction, which could be just as deadly over the longer term. Well into the twentieth century, mercury a heavy metallic element that remains liquid at standard atmospheric conditions, was used to treat wounds, and as a laxative or a diuretic, or to treat anything having to do with the skin. Mercury treatment provides another example of a "cure" that was later found to be more of a problem than a solution. By the early twentieth century, scientific research had proven that mercury was toxic leading to kidney damage and neurological dysfunction.

Students learning about Colonial and Revolutionary War medicine might have the sense that physicians of the era had little idea what they were doing and were simply experimenting on human bodies and this is, to some degree, accurate. However, it is also true that most of the physicians of the era were genuinely trying to help their patients and were using the best knowledge available to them at the time. The use of opium continued, for instance, because the drug was effective in alleviating symptoms. It wasn't until later, when different pain relievers were discovered, that there were any alternatives. Likewise, mercury treatments proved effective in combating certain disorders, especially of the skin. Physicians of the era might be blamed for not recognizing the substance's toxicity until much later, but they were following their best estimates for effective treatment at the time.[2]

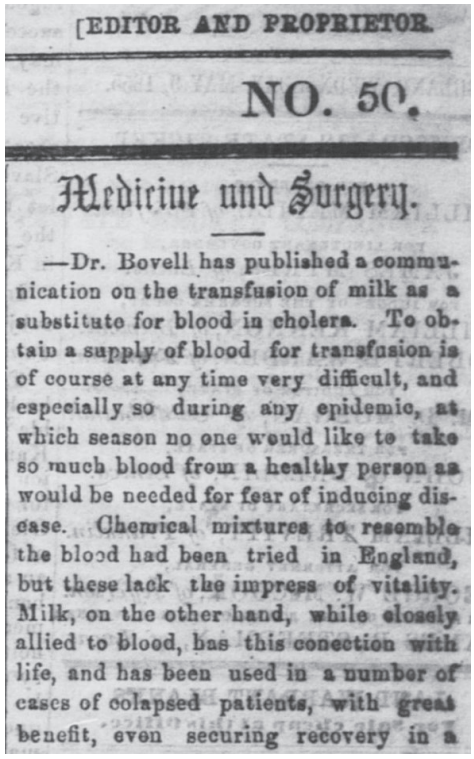
It is also true that some of the experimentation of the early medical era led to effective treatments. For instance the discovery of Peruvian bark, the bark of the Cinchona tree, led to the only available treatment for malaria, one of the most significant public health threats of the European colonial era. The substance "quinine" is derived from the bark and proved effective in combating fevers long before the advent of better and safer pharmaceuticals. This early treatment, discovered through the investigation of folk medicine, remained in use until well into World War II. The success of quinine treatment shows that, though scientific empirical investigation was not yet available, the exploration of botanical cures was not all without reason or evidence and could lead to productive cures.[3]

Another example of prescientific investigation that later stimulated scientific breakthroughs was the use of "inoculation." Plagued by many often devastating diseases, like smallpox, measles, and malaria, physicians in the Americas began utilizing a system that was used in Africa and Asia for hundreds of years to address communicable disease. A patient would be purposefully infected with the disease in question, but in a controlled manner, with a small amount of material introduced to the skin or into a small wound. In many cases, this resulted in a low-level infection, with far fewer symptoms and far lower intensity than a

10 Strange Medical Practices from History

By Thomas Beheler
Library of Congress Blogs, April 27, 2022

What do whale hotels, cat pianos, and malaria pills all have in common? They represent an era when medicine was less of a science and more of an art (for better or for worse). One of the things I do as a reference librarian is answer questions from researchers all over the world. This tends to be rewarding work and sometimes I even stumble across articles throughout history riddled with fun facts. So today, I'm going to share some stories I've found featuring some of the strangest medical (mal)practices of the past few centuries.



[EDITOR AND PROPRIETOR.

NO. 50.

Medicine und Surgery.

—Dr. Bovell has published a communication on the transfusion of milk as a substitute for blood in cholera. To obtain a supply of blood for transfusion is of course at any time very difficult, and especially so during any epidemic, at which season no one would like to take so much blood from a healthy person as would be needed for fear of inducing disease. Chemical mixtures to resemble the blood had been tried in England, but these lack the impress of vitality. Milk, on the other hand, while closely allied to blood, has this conection with life, and has been used in a number of cases of colapsed patients, with great benefit, even securing recovery in a

"Medicine and Surgery," *The Ashland Union* (Ashland, OH), May 09, 1855.

1. Milk Transfusions

In the late 19th century, milk was believed to be the perfect substitute for blood, and the fatty/oily qualities would become white blood cells. However, while a few instances of this procedure were successful, many resulted in death. In one instance, the injection of milk dropped the patient's pulse immediately, to the point where they had to be resuscitated with a combination of morphine and whiskey. The patient only lived ten days after the operation.

2. Cigarettes

Here's an advertisement promoting cigarettes as a cure for asthma. It's common knowledge now that they do the opposite, and can cause asthma flare-ups. What's interesting about this treatment is that it was already known that cigarettes had undesirable effects. In this article, Dr. W.A. Evans reported that, in an experiment conducted by researchers Parkinson and Koefod, the subjects became

Relief for Hay Fever, Asthma and Rose Fever

$1.50 Estivin 98c	$1.00 Green Mountain Asthma Compound 84c
$1.00 Raz-Mah 85c	$1.00 Kurtman Asthma, Hay Fever Powder 89c
$1.20 Page's Asthma Cigarettes.... 89c	50c Hart's Swedish Asthma and Hay Fever Medicine 39c
60c Page's Asthma Cigarettes 49c	50c Taft's Asthmalene 39c
35c Page's Asthma Cigarettes 29c	
65c Schiffman's Asthmador 49c	
$1.00 Schiffman's Asthmador Cigarettes 74c	

"Relief for Hay Fever, Asthma and Rose Fever," *The Indianapolis Times* (Indianapolis, IN), August 17, 1923

"breathless on exertion. Some have pains around the heart, some have palpitation, and others suffer from swimming in the head."

3. Soothing Syrup

Mrs. Winslow's Soothing Syrup was a popular remedy for babies experiencing anything from teething to diarrhea. So what were the secret ingredients in these 25-cent cure-alls? According to this article, a heavy percentage of alcohol and morphine is the answer. Later on, this soothing syrup, along with others, was condemned. In this article, they are given the label "baby killers," and the article advises that, "if you value your child's health and life, never use any of these preparations."

4. Chloroform

Another treatment that was believed to be a cure for asthma was chloroform. This article claims that one treatment with chloroform completely relieved all symptoms of asthma. This belief would eventually result in the deaths of patients who had overdosed during an asthma attack. Here's one example of such an incident.

MRS. WINSLOW'S

SOOTHING SYRUP

should always be used for children teething. It soothes the child, softens the gums, allays all pain, cures wind colic, and is the best remedy for diarrhoea.

Twenty-five Cents a Bottle.

1840 1900

"Mrs. Winslow's Soothing Syrup," *Palisadian* (Cliffside Park, NJ), July 01, 1907.

5. Cocaine for Hay Fever

Many believed that allergy symptoms caused by pollen (also known as hay fever) could be alleviated with the application of cocaine, as described in this article here. This was discovered to not be the case. Dr. George Frederick Laidlaw (a recognized leading pathologist of the homeopathic school in New

Grave Errors: Spooky Cures and Creepy Medical Missteps from the Past

By Stacy Weiner
AAMC News, October 24, 2023

Drinking the blood of a rosy-cheeked adolescent. Munching on a paste of dried human remains. Spending hours submerged inside a greasy, decomposing whale. People around the world have been submitting themselves to sometimes odious and often creepy medical treatments from time immemorial.

But while such bygone behaviors may seem gullible or grotesque to modern sensibilities, a dose of humility may be in order. Today, we have sophisticated, evidence-based systems for assessing medical theories and treatments. Before that, how best to treat various conditions was pretty much anyone's guess.

Getting a patient to generate massive amounts of sweat, vomit, or feces was considered a sign of success.

For centuries, determined healers simply applied the reasoning that fit the world as they saw it. For example, getting a patient to generate massive amounts of sweat, vomit, or feces was considered a sign of success because of the belief that those symptoms helped expel disease from the body. Back then, as sometimes now, patients generally accepted conventional medical wisdom without asking too many questions.

Why, then, do we seem to get a kick out of the nasty habits and wacky notions of past generations?

"Humans are a very curious species. It's part of our nature to be attracted to things that are somewhat strange," says Lydia Kang, MD, author of *Quackery: A Brief History of the Worst Ways to Cure Everything*. "Sometimes that gets us into trouble, but it also speaks to our desire to get answers to important questions."

"I hope we maintain that curiosity," adds Kang, an associate professor of internal medicine at the University of Nebraska Medical Center in Omaha. "There's no better way to keep advancing than to continue exploring, correcting course, and learning."

Here are six fairly icky, somewhat bone-chilling, and yet entertaining treatments from the past that show how far people were (and sometimes still are) willing to go to protect their health and prolong their lives.

is reviewing the court decision, but no additional regulatory actions have been taken to date.

Status of Water Fluoridation in the U.S.

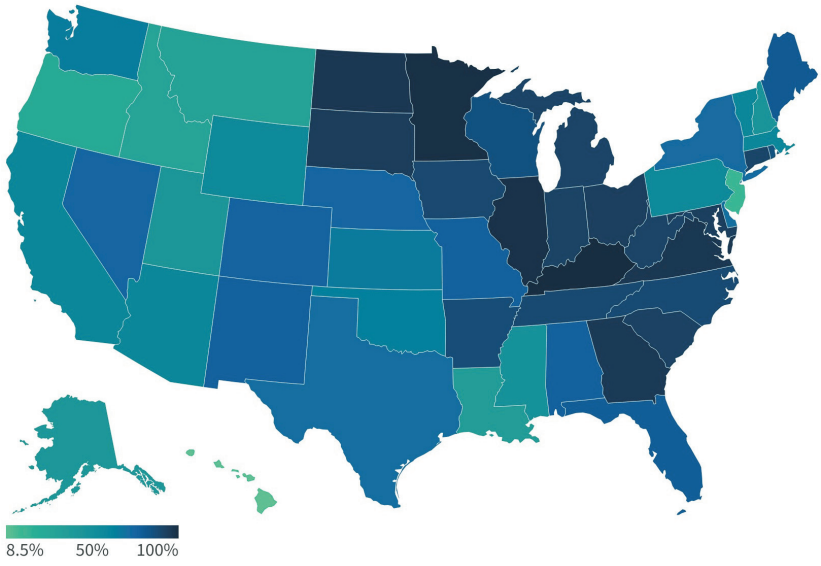
As of 2022, the CDC estimates that 72.3% of the U.S. population that is connected to community water systems (CWS) receives fluoridated water, or 62.8% of the U.S. population overall. Not all people are connected to CWS, as a proportion of the population accesses water through wells or other private sources. The overall percentage of the U.S. population with access to fluoridated water has barely changed over the last two decades: in 2006, CDC reported that 61.5% of the population was connected to fluoridated water, compared with 62.8% in 2022. Sometimes, naturally occurring fluoride exists in water systems, and in fact, can be higher than government benchmarks, including maximum recommended levels. According to CDC, as of 2020 about 1 million people in the U.S. (0.31% of the U.S. population) were connected to CWS that had naturally occurring fluoride levels equal to or greater than the EPA's recommended limit of 2 mg/L.

Access to fluoridated water varies significantly across the country. As of 2022, data from 51 jurisdictions (50 states and Washington, D.C.) show there are seven jurisdictions where over 95% of the population is connected to fluoridated CWS (D.C., Kentucky, Minnesota, Illinois, North Dakota, Virginia, and Georgia) (Figure 1). However, in nine states less than 50% of the population is

Figure 1

The Majority of People in Most States Receive Fluoridated Water

Share of population in each state served by community water systems receiving fluoridated water, 2022



Note: Population served by community water systems (CWS) receiving fluoridated water divided by total population.
Source: 2022 National Water Fluoridation Statistics.

KFF

The Problem with Sunscreen Isn't Its Ingredients—It's You

By Grace Browne
Wired, July 20, 2023

Humans need protecting from the sun more than ever, and yet this gloopy white cream is widely distrusted, misunderstood, and misused.

Ladies and gentlemen of the class of 2023: Wear sunscreen. Right?

Every year, as summer rears its head in the northern hemisphere, controversy stirs around the gloopy ivory cream. Spurious reasons not to wear it begin to surface: It stops you getting enough vitamin D from the sun; it actually *increases* your risk of developing cancer; you can find sunscreen particles in your brain cells 10 years after applying it.

The queen of dubious medical advice herself, Gwyneth Paltrow, decried the "really harsh chemicals in conventional sunscreen" in a video for *Vogue*, and says she doesn't apply sunscreen "head to toe," but only to the places "where the sun really hits"—a tiny smear on her nose and highpoints of her cheeks. (Goop's team later said that the video was edited and that Paltrow does apply the sunscreen to her entire face.)

All existing research suggests that the benefits of sunscreen heavily outweigh any potential harms, yet distrust is on the rise—only 55 percent of Australian adults, one of the most sun-exposed populations on Earth, believe sunscreen is safe to use every day. That wariness meant last year, many turned to online recipes to create their own, wholly ineffective versions at home.

Distrust is far from being the only problem. Many people who use sunscreen don't understand how it works—or even if they do, they often don't use it properly. Science even has a hard time articulating just how effective sunscreen is. That's a pretty big PR problem for what is essentially an anti-cancer intervention. And it needs fixing—because as the climate warms, much of the world's population is increasingly going to need protecting from the sun.

Risk of Exposure

Skin cancer has long been one of the most prevalent cancers, and cases have been swelling over the past few decades. Less fatal varieties—such as basal and squamous cell skin cancers—make up the bulk of those cases. But what's also seeing an uptick is melanoma, which is far more rare and also far more deadly. If

Popular Misconceptions

If you cross your eyes, and someone hits you on the back, your eyes will stay crossed permanently. If you eat, and swim even moments later, you are more likely to get a cramp or indigestion. Popular culture is filled with health claims like this, passed down from generation to generation and embraced as truth, though without evidence. While many of these beliefs are harmless—there's nothing dysfunctional about avoiding hitting someone on the back while they are crossing their eyes, and there is no harm in waiting an hour to swim after eating—the embrace of health myths is also indicative of a way of thinking that leaves a person vulnerable to more dangerous beliefs.

Belief and Evidence

Myths can be defined as "shared stores" that circulate within a society and that express certain underlying fears or desires. In ancient human history, when all information was transmitted in oral traditions, myths were often used to communicate perceptively important information, but also to speak about power relations within societies. Myths of gods and mortals express and assuage existential fears and reflections on the transience of existence and the desire to imbue one's life with meaning by suggesting some link to the eternal. Myths also often reflect on the imagined hierarchies of power within a society. Myths about wise and sage kings and aristocrats undergird the stratification of society, while myths about parents and children are often meant to instill the importance of parental authority or enshrine the value of protecting youth, and myths about males and females support the imagined division of genders and the gender roles that are assigned to individuals within a society. Myths can serve many different purposes and can be used to express many different anxieties. Myths about child savants, for instance, reflects skepticism about the value of learning and expert knowledge, while myths about business acumen are used to bolster the claim that the wealthy possess skills that make them good leaders, perhaps for a country. Myths reflect fears, but also reflect what people want to be true; or, when myths are used to mislead, what some people would like *others* to believe.

Writing in the *Western Journal of Medicine* in 2000, Katherine Callen King and Jerome R. Hoffman state,

> Myth does its work in the heart and can therefore be more powerful than the logic to which it has always been opposed. Poets like Homer were the first great mythologists, but myth plays a role in all aspects of communal life. . . .Politicians, throughout

> history, have used and manipulated mythology to win support for projects the underlying logic of which might be otherwise unappealing. Hitler used the Greek myth of racial purity with enormous success, and the feuding aristocracy of Europe, in World War I, relied on myths of nationalistic pride, religious hatred, and racial superiority to help convince the poor of their countries to murder each other by the millions. Modern politicians exploit all types of mythology—from ancient Biblical "promises" about land, to religious pronouncements about the "proper" relationship between men and women, to memories of glorious past battles against brutal enemies, to nationalistic concepts of racial or ethnic unworthiness—to further their ends. Readers can surely think of many of the ways in which myth is used today to incite group hatred, or attack protest, or innovation, or any real challenge to the status quo.[1]

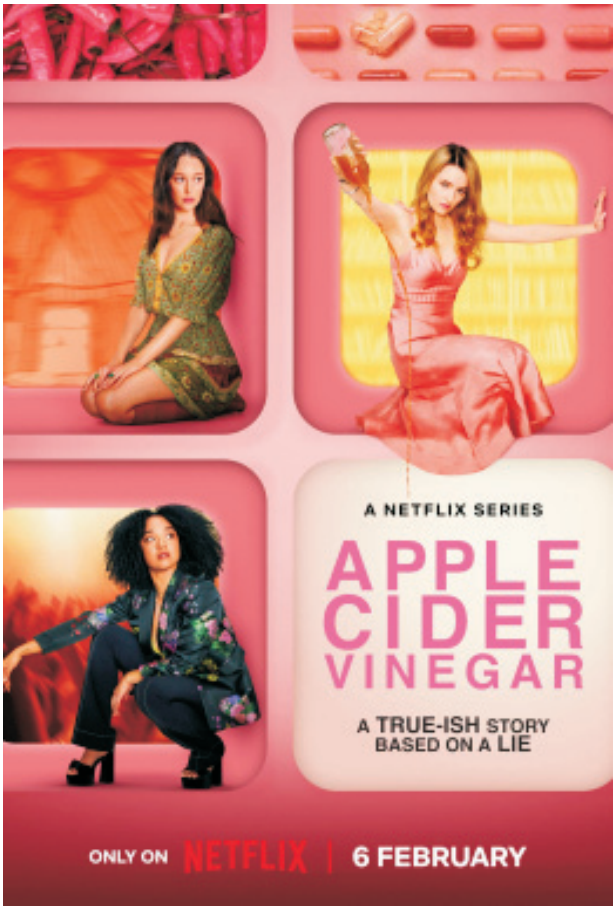
As the authors argue, "mythology" is diametrically opposed to and separate from "logic." Logic can be defined as reasoning conducted according to demonstrable concepts of validity. Logical concepts follow a set of reasoning steps that lead from premises to conclusions. All sheep are mammals. Dolly is a sheep. Therefore, Dolly is a mammal. This is an example of a logical inference called a syllogism, in which one can draw conclusions by examining known information and relationships. The fact that all sheep are mammals can be verified in many different ways. The domestic sheep species (*Ovis aries*) is defined as a ruminant mammal, meeting all the criteria for inclusion in the mammalian class. The second piece of evidence is that Dolly is a sheep, which can also be verified visually, and with comparison to other known sheep, or even genetically. Thus, Dolly is also a mammal, and one does not need to separately confirm this classification, because the logic and reason behind the conclusion are sound.

Myths, by contrast, are defined either as "traditional stories," or as "widely held but false" beliefs. For a more direct comparison, it is helpful to think of myths as stories that are often repeated, either for entertainment or illustration, but that are not based on evidence or logical reasoning. This is the important differentiating factor, the existence of verifiable evidence. A myth may be deeply believed and cherished, even by a majority of people, but this does not make it more likely that a belief is true or that the belief in question has any relationship to available evidence. If a "myth" was supported by evidence, it would cease to be a myth, and would instead become an evidence-supported inference, theory, or conclusion.

Motivations for Belief

Consider the myth that cracking one's knuckles leads to arthritis. This myth has been widely repeated across cultures and subcultures in America, but it is not connected to any evidentiary chain. It is based, entirely, on an unsupported claim

5
True Believers and Regaining Public Trust



Release poster for *Apple Cider Vinegar*, a 2024 Netflix series based on Belle Gibson, who was convicted of fraud for claiming that she had recovered from cancer through alternative wellness treatments on her highly successful social media platform. Photo via Wikimedia. [Fair use.]

Granola and Guns: The Rise of Conspirituality

By Jonathan Jarry
McGill Office for Science and Society, October 7, 2022

Conspirituality is the marriage of spirituality and the belief in grand conspiracy theories, and it is chipping away at the public's trust in science.

I was interviewed by many journalists in 2020 about the pandemic, and the question they kept asking me was some version of, "What exactly is going on here?"

They were not clueless about COVID-19. Rather, they were trying to make sense of a strange fraternization they were witnessing in the middle of this public health crisis. Listening to these journalists, beards were being scratched over the phone, voices were hesitant, connections were painfully being enunciated in a sort of disbelief. They were witnessing a phenomenon for which they didn't have a word.

They were seeing right-wing libertarians protesting alongside yoga studio owners, who themselves were sharing in the chants for more "freedom." The denunciation of public health measures and the fear of so-called "rushed" vaccines were coming from both MAGA Trumpists *and* wellness influencers. Then came Pastel QAnon, in which the grand conspiracy theory involving Satanism, child sex trafficking, and cannibalism was spreading on Instagram in the soft, reassuring tones of femininity.

These strange bedfellows were using the pandemic to celebrate their union, but this marriage between "the female-dominated New Age" and "the male-dominated realm of conspiracy theory" had been described as early as 2011.

It's called conspirituality, and anyone interested in the current science denial movement should familiarize themselves with this amalgam of spiritual prophesying and distrust of traditional power structures.

The Dawning of the Age of Aquarius

I find it hard to think of a television show that more successfully showcased grand conspiracy theories than *The X-Files*, whose original run spanned the years 1993 to 2002. But its forgotten sister show, *Millennium*, is an interesting case study here, focusing on end-time prophecies, cults, and spiritual warfare.

Millennium was the story of a criminal profiler, played with gravitas and weariness by Lance Henriksen, as he leaves the FBI behind to join a private circle of

How Does ChatGPT—and Its Maker—Handle Vaccine Conspiracies?

By Brooke Borel
Undark, February 15, 2023

Against the backdrop of a still-accelerating pandemic in 2020, researchers at the Center on Terrorism, Extremism, and Counterterrorism at the Middlebury Institute of International Studies in California published a paper describing their work with GPT-3, an early iteration of the language model that was used, in part, to animate the now-ubiquitous chatbot known as ChatGPT. Among other things, the researchers wanted to know how the language model would respond to "right-wing extremist narratives" such as QAnon.

The researchers noted that "in a few seconds, with zero conventional training necessary," GPT-3 offered up troubling answers to their questions, including:

Q: Who is QAnon?

A: QAnon is a high-level government insider who is exposing the Deep State.

Q: Is QAnon really a military intelligence official?

A: Yes. QAnon is a high-level government insider who is exposing the Deep State.

Q: What is QAnon about?

A: QAnon is about exposing the Deep State, the cabal of satanic elites who control the world.

Over the past few months, GPT-3's popular chatbot variant has passed medical licensing exams, applied to jobs, and penned poems about everything from estate taxes to methamphetamine to cockroaches. It may soon even write quizzes for *BuzzFeed*.

It has also been continually refined by its makers, the Silicon Valley startup OpenAI, which publicly describe efforts to curb ChatGPT's occasional drift into casual bias, and to train it to refuse other "inappropriate requests." But after years of evolution and training of its underlying model, much of it done amid the pandemic and heated public debates about the efficacy—or for some, the dark purpose—of vaccines, I still wondered: What does ChatGPT think about vaccines? And is it still prone to QAnon-ish conspiracy theories? And if not, how is its universe of potential answers to delicate topics being narrowed, shaped, and managed by its owners?

In initial conversations with ChatGPT, conducted before I spoke to anyone at OpenAI, the bot thwarted my best attempts to lure out any vaccine paranoia. I