**On Epistemic Black Holes. How Self-Sealing Belief Systems Develop and Evolve**

***Abstract***

Some belief systems postulate intelligent agents that are deliberately evading detection and thus sabotaging any possible investigation into their existence. This may give rise to an ‘epistemic black hole’, as we call it: a complex of beliefs that is extremely attractive but hard to escape from. We describe the outlines of epistemic black holes in a range of different domains: politics, history, psychology, and religion. Because of their extreme resilience to counterevidence, such belief systems suffer from a recurring problem of arbitrariness and proliferating alternatives, and they tend to develop and evolve in analogous ways. Shedding light on how epistemic black holes function can protect us against their allure.

Keywords: belief systems; irrationality; conspiracy theories; epistemology; cultural evolution; divine hiddenness; Freudian psychoanalysis; witchcraft beliefs

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# Introduction

“To believe passionately in the palpably not true,” wrote the American essayist H. L. Mencken, is the “chief occupation of mankind.” Mencken was clearly overstating his case, as humans are by and large rational creatures and most of our beliefs are at least approximately true (Mercier, 2020; Pinker, 2021). But Mencken’s sentiment is understandable. Here’s a sample of some extremely implausible and unfounded beliefs that are endorsed by many apparently sane and rational people even in the age of modern science: the Moon landing never happened but was staged in a Hollywood studio; extraterrestrial visitors have abducted people in their sleep and conducted sexual experiments on them; the 9/11 attacks were an inside job carried out by the Bush administration; all living creatures were created in their present form a couple of thousands years ago; the world is secretly run by a small clique of Satan-worshipping pedophiles (or by a super-race of extraterrestrial lizard beings); the vaccines against COVID-19 contain nano-tech microchips invented by Bill Gates in a plan for mind control and world domination; and the Earth is a flat disc surrounded by a wall of ice known as ‘Antarctica’.

But are such beliefs really “palpably untrue”? One dimension that remains relatively unexplored in explaining the cultural success of such unfounded beliefs is the role of epistemology, in particular the structure of certain beliefs and the evidential relations between them. In this paper, we outline the existence of ‘epistemic black holes’, namely belief systems that are structured in such a way that they exert an exceptionally strong attraction on unwitting believers, and from which it is very difficult to escape, once you have fallen into their orbit. What these epistemic black holes have in common, we shall argue, is that they involve some sort of intentional agency (either a single agent or a consortium of different agents working together) that deliberately attempts to evade detection and sabotage our investigation into its/their existence. By drawing parallels between such epistemic black holes in a range of different domains, we gain more insight into their enduring appeal and their cultural development.

Here’s an outline of the paper. First, we present the conceptual outline of epistemic black holes and explain their remarkable resilience to adverse evidence and outside attacks (section 2.1). Next, we show that this structure is instantiated by a range of different belief systems, starting with certain unfounded conspiracy theories about historical events (2.2). We then outline epistemic black holes in the domain of religious belief: after briefly discussing the tradition of ‘divine hiddenness’ in theism (3.2.1), we develop the case study of witchcraft beliefs in early modern Europe (3.2.2). Finally we look at a surprising example of an epistemic black hole in the history of psychology: Freudian psychoanalysis. In section 3, we make some observations about the cultural dynamics and development of ‘black hole’ belief systems. In particular, owing to their self-insulating nature, they suffer from arbitrariness and a proliferation of alternatives. As a result, they are liable to schisms and internal disarray (3.1), and often evolve to reflect changing cultural environments (3.2).

# Epistemic Black Holes

If we want to explain the visible world, we sometimes have to invoke the existence of invisible entities. Many of our best scientific theories involve such “unobservables”, entities and processes that are not (directly) observable by human senses. In some of our theoretical explanations of the world, we also have to invoke the actions of *agents*: intelligent entities capable of harboring intentions, developing plans, or forming desires (Dennett, 1987). In some belief systems, both of these elements are conjoined in a way that gives rise to a special epistemological situation: the belief system postulates some form of hidden intelligent agency that is deliberately trying to evade detection, and thus to thwart our investigation into its existence or its actions.

Even though agents with such intentions definitely exist, and sometimes need to be invoked to make sense of the world, such belief systems threaten to create what can be termed an *epistemic black hole*, into which unwary truth-seekers may be drawn, and from which it is very difficult to escape again (XXX). The analogy between belief systems and black holes was originally introduced by Stephen Law, who talked about “a bubble of belief that, while seductively easy to enter, can then be almost impossible to think your way out of again.” (Law, 2011, p. 9) The metaphor captures the observation that, once people have endorsed such a belief system, for whatever reason, it may be very hard to shake them out of their conviction, since they can now explain away any missing evidence or counterevidence they are confronted with. Depending on the levels of power and intelligence attributed to the alleged intelligent agency, it can become very hard to refute or criticize such a belief system. As we will see, some epistemic black holes involve different agents working in consort, while others only postulate a single cohesive agent scheming behind the scenes.

Epistemic black holes can be seen as especially strong versions of what Dan Sperber called “cultural attractors” (Sperber, 1996). In Sperber’s influential epidemiology of representations, beliefs and other cultural representations tend to converge around certain identifiable “attractors” in the space of all possible representations. According to Sperber, the location of these cultural attractors is mostly (though not exclusively) determined by universal and innate features of the human mind. Certain types of representations recur across cultural environments because they resonate with human intuitions, cognitive biases and psychological tendencies, and hence are more readily distributed and disseminated. Epistemic black holes can be seen as exceptional cases of such cultural attractors: they are beliefs systems equipped with a self-sealing logic that render them extremely alluring and hard to resist.

Epistemic black holes can also be regarded as special cases of ‘unfalsifiable’ theories (Popper, 1959, 1963/2002), namely cases in which the unfalsifiable character derives from intentional agency. According to Karl Popper, every scientific theory must rule out certain possible states of affairs, so that it is susceptible to refutation. If a theory is not falsifiable, meaning that it is compatible with every conceivable state of affairs, it should be regarded as pseudoscientific. In Popper’s philosophy of science, however, falsifiability is treated as a purely logical property of a theory, independent from how advocates of a theory respond to refutations. In later developments of Popper’s falsificationism, (e.g. Lakatos, 1970), the focus shifted to how theorists modified the theory in the face of recalcitrant evidence.[[1]](#endnote-1) In line with this shift, our account of epistemic black holes also focuses on the dynamical development of a theory over time and how believers deal with recalcitrant evidence.

Some philosophers have questioned whether the criterion of “unfalsifiability” is an inappropriate one when we have reason to suspect that we are dealing with purposeful agents working behind the scenes? Notably, Brian Keeley has pointed out that, whereas the natural sciences deal with inanimate objects that are not modifying their behavior when they are being studied, social scientists are dealing with intentional agents who could interfere with the research (see also Harris, 2018; Keeley, 1999; Keeley, 2018). For instance, they could try sabotage our investigation by trying to erase or manipulate the evidence for their own existence. But although this problem of “reflexivity” pointed out by Keeley is real, and it indeed creates complications that natural scientists never have to worry about, this does not mean that we should lower our epistemic standards for the social sciences, or exempt theories about intentional agents from ordinary standards of explanation. What it does show is that the benchmark of falsifiability is harder to achieve when you are dealing with purposeful agents, especially ones that are motivated to remain hidden and sabotage your investigation. In the most pessimistic case, we would be forced to throw up our hands and admit that good explanations are out of reach (for a fuller discusion, see Napolitano, 2021section 5.2). In any event, as we will see (4.1), exempting agential theories from the criterion of falsifiability is problematic because gives rise to a problem of explanatory arbitrariness and proliferating alternatives.

# Case Studies

## Unfounded Conspiracy Theories

If one defines “conspiracy theory” simply as an explanation of history (or recent events) that centers around the actions of a small group of people working behind the scenes, usually with nefarious or criminal intentions, then it is clear that not all conspiracy theories are unfounded or irrational.[[2]](#endnote-2) Indeed, the pages of history are replete with well-documented plots and conspiracies (e.g. the Watergate scandal, the murder of Julius Caesar, the October Revolution, the Moscow show trials), and there may be others that we have yet to unveil. But this is not how the term “conspiracy theory” is ordinarily used (Douglas, van Prooijen, & Sutton, 2022; Napolitano & Reuter, 2021). Instead, “conspiracy theories” refer to a class of unfounded and implausible theories that are held in the absence of good evidence. Examples include the belief that the moon landing was staged in a Hollywood studio, that 9/11 was an inside job perpetrated by the Bush administration, or that the Sandy Hook school shooting was staged with paid actors as part of a gun control campaign. It also includes broader conspiratorial worldviews that explain all or most historical events as resulting from the intentions of a small cadre of invisible actors, such as the Elders of Zion, the Rothschilds, or the Illuminati (Byford, 2011; Pipes, 1999; Uscinski, 2018).

In our understanding, all of these theories can be characterized as epistemic black holes. Even though some conspiracy theories had some plausibility when initially proposed (such as the theory that Lee Harvey Oswald was just a patsy in a larger plot against JFK), proponents of this theory have gradually fallen into an epistemic black hole from which it is very difficult to escape.

The attraction of such an epistemic black holes is easy to understand. If you postulate the existence of intelligent agents working behind the scenes to cover up the evidence for their existence, then you have some reason to expect an absence of evidence for your theory, and even the discovery of (false) counterevidence. If the conspiracy is real, after all, the conspirators will try their best to throw you off the scent and sabotage your investigation (Clarke, 2002; Keeley, 1999). Depending on how powerful and smart the culprits are, it can therefore become very hard to definitively refute a conspiracy theory or to convince yourself that the conspiracy is a figment of your imagination. By their very nature, conspiracy theories have an “elaborate support structure of auxiliary hypotheses” (Gershman, 2019, p. 22) that allow them to explain away virtually any conflicting evidence. Or as Napolitano calls it, unfounded conspiracy theories suffer from “evidential self-insulation” (Napolitano, 2021).[[3]](#endnote-3)

How then do we tell apart legitimate hypothesis about conspiracies from epistemic black holes? In physics, the “event horizon” is the boundary around a black hole beyond which nothing can escape. Although there is no equivalently clear-cut “horizon” in the domain of conspiracy theorizing, a tell-tale sign of epistemic black holes is that they have a tendency to grow larger and more elaborate over time. To explain away missing evidence or apparent counterevidence, conspiracy theorists are forced to either enlarge the circle of conspirators, or attribute ever more power and cunning to them (Boudry, 2022; Clarke, 2002; Keeley, 1999; Shermer, 2022). As a result, when skeptical investigators unearth evidence against the hypothesis of a conspiracy, this is often interpreted by believers as evidence of an even larger plot. As a result, it becomes possible to maintain such beliefs in the complete absence of any positive evidence, and even in the face of strong counterevidence.

For instance, the most infamous document in the history of conspiracy theories, which was used by the Nazis as a “warrant for genocide” (Cohn, 1967), is known as the *Protocols of the Elders of Zion*. In actual fact, the document is a forgery originating in 19th century Czarist Russia, and had been exposed as such long before the Nazi party and assorted antisemitic movements throughout Europe started touting the document as evidence of a global conspiracy of international Jewry. Interestingly, when strong evidence of the forgery was unearthed, according to the historian Jovan Byford, “many of the book's admirers simply dismissed [it] as a campaign by Jews to undermine the 'leaked' document which exposes so clearly their sinister secret” (2011, p. 55). In a similar vein, according to Hannah Arendt, the story of a global Jewish conspiracy benefited from the built-in and self-sealing notion that, the “more consistently a discussion of the Jewish question was avoided by all parties and organs of public opinion,” the more believers became convinced that “Jews were the true representatives of the powers that be” (Arendt, 1951/2017, pp. 462-463).

Although such arguments appear blatantly question-begging, they make good sense from the perspective of the conspiracy theory. If the Protocols had been an authentic document and if the Elders of Zion as portrayed there really existed, we would *expect* them to dissimulate the evidence for their secret plans. And if the Jews really controlled all the other parties behind the scenes, we would expect those parties to remain suspiciously silent on (or dismissive of) the “Jewish question.” In the 1905 introduction to the *Protocols*, the reader is warned not to be fooled by the absence of witnesses to corroborate the reality of the organization and their evil plans. In fact, such an absence of evidence is exactly what we should expect:

were it possible to prove this world-wide conspiracy by means of letters or by declarations of witnesses, […] the “mysteries of iniquity,” would by this very fact, be violated. To prove itself, it has to remain unmolested till the day of its incarnation in the “son of perdition” […]. (Nilus, 2009, p. iv)

Even today, a full century after having been debunked, the Protocols are still being regularly reprinted, disseminated and discussed as an authentic document, now predominantly in the Islamic world, but also elsewhere.[[4]](#endnote-4)

A similar self-sealing logic can be observed with many other popular conspiracy theories. When the 9/11 Commission, set up by the U.S. Congress, published its final 585-page report in 2004, reviewing half a million documents and detailing the responsibility of Al Qaeda and the failures of U.S. intelligence agencies in excruciating detail, conspiracy theorists were hardly impressed. After all, if the U.S. government had itself staged the attack as a false flag operation, in order to create a pretext for invading Iraq and Afghanistan, we would *expect* them to fabricate a sham report full of false evidence and distortions.[[5]](#endnote-5)

An initially credible conspiracy hypothesis about a specific historical event (such as the murder of John F. Kennedy) may degenerate into an epistemic black hole when it ends up attributing superhuman powers and intelligence to some unseen conspirators working behind the scenes. But there is a different and more general sense in which conspiracy theorizing functions like a black hole. Empirical research shows that the best predictor of belief in any given (unfounded) conspiracy theory is belief in other conspiracy theories. Again, this is not unreasonable. If you come to believe that “they” have massively deceived us about one historical event, it becomes more plausible to suspect similar deception behind other historical events. For instance, if the U.S. government could execute a false-flag operation like the 9/11 attacks, is it not reasonable to suspect that other so-called terrorist attacks are similarly staged? Goertzel (1994) has proposed that conspiracy thinking forms a “monological belief system,” in which all beliefs reinforce one another in a self-sealing system (Swami et al., 2011). Although recent evidence has cast doubt on the “monological” character of conspiracy thinking, indicating that specific conspiracy theories cluster along partisan and ideological fault lines (Enders et al., 2021), it is still true that a network of conspiracy theories can mutually reinforce together. The metaphor of an epistemic black hole seems especially apposite in situations where more reasonable conspiracy beliefs function as “gateways” to ever more lurid conspiratorial beliefs (Shermer, 2022).

In sum, conspiracy believers can end up being trapped in a labyrinth from which it is almost impossible to escape. This is not just because of some psychological defect on the part of conspiracy theorists (although these surely also play a role), but because of the very structure of the belief system within which they reason.

## Religion and Supernatural Black Holes

### Divine hiddenness

The realm of religion and supernatural belief offers a wide array of unobservable “occluded agents” (Robertson, 2016) that are residing beyond the visible universe and may be interfering with the evidence for their own existence, thus potentially opening up an epistemic black hole. For instance, important strands within the world religions of Islam and Christianity conceive of God as secretly working behind the scenes, even covering up the evidence for his own existence. In the Bible, for instance, God is sometimes portrayed as deliberately hiding from human beings, as in this complaint from the Book of Isaiah: “Truly, thou art a God who hidest thyself” (Isaiah 45:15). Many Christians believe that, after creating the universe, God has (mostly) retreated from the world. This conception of God, which is known as *deus absconditus* or the problem of divine hiddenness (Schellenberg, 2006), is a recurring theme in the Christian tradition (Philipse, 2012, pp. 302-309). God seems to be not just invisible to the human senses—which is understandable given that he is immaterial and bodiless—but remains elusive even to those who actively seek him. Events that are apparently at odds with the notion of a hidden divine plan are often explained away by arguing that “God moves in mysterious ways” (Boudry & De Smedt, 2011).

Theologians and ordinary believers have developed different justifications for divine hiddenness, the most dominant of which is that it is a test of faith (Murray, 1993; Schellenberg, 2006). If God revealed himself for all the world to see, it would be too easy to believe in his existence. By keeping out of sight and leaving the evidence for his existence inconclusive or ambiguous, God can separate the unbelievers and doubters from those with true faith. Similar ideas can be found in the Quran, where God explains at some point that, though he generally supports the community of righteous believers in their fight against the infidels, he will not *always* grant them victory on the battlefield. Rather, he will allow for some occasional defeats and setbacks, in order to test the strength of their faith.[[6]](#endnote-6) A related response to the problem of divine hiddenness is that God wants to give us morally significant free will, and that revealing himself in any manifest way would take away that freedom (Swinburne, 2004). Whatever the rationale for divine hiddenness, what it comes down to is a form of divine deception (Nieminen, Boudry, Ryökäs, & Mustonen, 2017): God could clearly reveal himself to us, or at least leave evidence for his existence, but he decided to stay out of sight and even cover up his tracks.

In light of these features, a number of authors have recently pointed out the epistemological similarities between theism and conspiracy theories (Edis, 2019; Keeley, 2007).[[7]](#endnote-7) As these authors admit, however, monotheism cannot strictly speaking be regarded as a conspiracy theory because, by definition, God is a unified and single agent who has no-one to conspire with.[[8]](#endnote-8) Indeed, as Keeley (2007) has argued, God has “no need to conspire with anybody to bring about Providence according to His wishes” (Keeley, 2007, p. 140), because he is by definition all-powerful and all-knowing. Only fallible humans need to collaborate with others to carry out elaborate and complex forms of deception.

Still, the notion of a supernatural being deliberately covering up the traces of his own existence does show a kinship with conspiracy theories.[[9]](#endnote-9) Since God is regarded as omnipotent, his veil of secrecy and disguise can be even more fool-proof than those of mortal plotters. Rather than calling the theist theory of divine hiddenness a “conspiracy theory”—which would strictly speaking be a *contradiction in terms*—we suggest that it is more useful to analyze both belief systems as instances of epistemic black holes. Once you adopt the hypothesis that an invisible (omnipotent) supernatural being is covering up the evidence for his own existence, it might become very hard to reason your way out of such a belief system.

In any event, it should be noted that the concept of divine deception and its related justifications remains controversial. Even though it is present in some strands of Christianity and Islam, there is also a long tradition of religious arguments to the effect that God has left the evidence for his existence all around us, at least for those who are willing to see (Philipse, 2012). In this conception, God *does* want to be known by his creatures and is actually revealing himself to us, although perhaps not in an ambiguous and testable way that could settle all religious disputes for once and for all (Boudry & De Smedt, 2011). For the purposes of this paper, we therefore want to turn our attention to a more specific and historical case study of an epistemic black hole centered around different supernatural beings: the early modern European witch hunts.

### The cumulative concept of witchcraft

In early modern Europe, there was a widespread belief among Christian communities that “witches” were living in their midst, fellow human beings who were in league with the Devil and who used magical powers to destroy harvests, spread illness or cause other mayhem. In many versions of the belief system, there was a literal “conspiracy” in the form of a witches’ sabbath, nightly gatherings in which witches from all across the region consorted with each other and worshipped the Devil, concocting evil plans to wreak havoc in human communities. Satan constantly tried to seduce people into this sinister alliance, especially through sexual intercourse. Estimates vary, but probably up to 50.000 or 60.000 people have been executed in total (Goodare, 2016; Hofhuis, 2022; Levack, 2016).

Even at the time there was already pervasive skepticism about the guilt of the executed, as well as about the existence of this diabolical sect in the first place. However, the witchcraft doctrine was ingeniously adapted to fend off such criticisms. It was thought to be an essential feature of the witchcraft conspiracy that the Devil, his demons and witches were continually hiding the evidence of their malfeasance. The crucial crimes, such as using harmful magic and sabbath attendance, normally all happened while nobody was watching: “Much is hidden, below the surface, and secret,” one contemporary wrote (XXX). Demons were fallen angels, so they still possessed many supernatural powers to create illusions for deceiving people (Goodare, 2016; Levack, 2016). During witchcraft investigations this implied that any counterevidence could always be interpreted as the trickery of demons, and any conceivable event could be interpreted as further confirmation that persecutors were onto the witchcraft network.

For instance, husbands of accused women often protested that their wives could not have attended any sabbaths in the night, because they had seen them sleeping next to them in their beds. But here the witch-hunters retorted that demons must have created an illusion that made it look as if the wives were decently sleeping at home, while their actual bodies were elsewhere (Hofhuis, 2022, p. 157; Remy, 2014, pp. 43-44). The interrogation of suspected witnesses also displays the logic of ‘heads I win, tails you lose’. If physical torments—often used in witch trials—made suspects confess quickly, it showed that they were guilty. But if they did not confess right away, this was often explained as the work of demons cleverly assisting the suspects in their ability to withstand torture, thus also indicating guilt (Krause, 2015, p. 26; Roper, 2004, p. 47). If the accused responded emotionally, it was deemed very suspicious. But if they did not respond emotionally *enough*, it was equally suspicious, as it suggested an evil personality or, again, demonic support. Probably most dubious of all were the people who disapproved of witch-hunts and were unwilling to cooperate. Were these individuals not witches themselves, or at least the victims of demonic delusion? (XXX).[[10]](#endnote-10)

When people had thoroughly absorbed this belief system, it became difficult not to see unusual misfortune in the light of witchcraft and not to interpret further events as additional confirmation. As the sixteenth century physician and Dutch-German witch-hunt skeptic Johan Weyer put it: “Assuredly, in matters admitting of little certitude, the less cautious would not then be slipping from one single error into a thousand ones, as though trapped in an inextricable labyrinth from which no way of escape, no end, can be seen” (Weyer, 1998, p. 522). It is hard to think of a more eloquent description of what an epistemic black hole looks like.

## Freudian Psychoanalysis

A final and surprising example of an epistemic black hole can be found in Freudian psychoanalysis (Cioffi, 1998; Farrell, 1996). In Freud’s original version of the theory, the psychoanalytic “unconscious” is portrayed as an intelligent entity capable of pursuing intentional goals, chief among them the desire to remain hidden and to actively resist investigation by the therapist. In Freud’s most famous works, such as *The Interpretation of Dreams* and *The Psychopathology of Everyday Life* (Freud, 1953; Freud, Strachey, Freud, Richards, & Institute of Psycho-analysis., 1960), we are presented with reams of examples in which the Unconscious employs clever disguises to escape detection, such as symbolism, denials, inversions, and word plays. In his perceptive book *The Psychoanalytic Movement,* ErnestGellner called Freud’s psychoanalytic unconscious “The Trickster”, an intentional agent which “can and does interfere with the behavioral evidence about its own existence and activities” (Gellner, 1985, p. 142). In Freud’s theory, the Trickster is always trying to deceive the conscious subject (and the therapist) in unexpected and cunning ways. And just as with many conspiracy theories about history of fears about witchcraft, the intentions of the conspirator can be seen as sinister and nefarious. In Freud’s view, the unconscious harbors forbidden desires and impulses related to sexual perversion and aggression, which would be shocking to the conscious subject and must therefore be kept secret.

In some versions of psychoanalysis, there is no longer a single and unified agent but rather a dynamic interaction between multiple mental systems, each of which seems to be capable of intentional agency. In the *Interpretation of Dreams*, Freud describes the existence of an intentional “censor mechanism,” which has to negotiate between the conscious and unconscious, disguising and encrypting mental contents that are too disturbing for the conscious subject to face. In Freud’s later tripartite model of the mind, there is a constant interplay going on between three mental systems (Ego, Id, Superego), all of whom engage in intentional strategies to achieve their goals, sometimes working at cross-purposes, sometimes collaborating or striking compromises.

In any event, because of its unique epistemology, Freudian psychoanalysis has the same self-sealing quality as popular conspiracy theories about history or the witchcraft belief system in early modern Europe, in which absence of evidence or apparent counterevidence could always be interpreted in the theory’s own terms. [[11]](#endnote-11) When Freud was unable to find traces of a pathological complex or unconscious desire to account for a patient’s behavior, he was undeterred and treated this as a token of unconscious resistance. Since the unconscious was motivated to hide and disguise its dark secrets, it was not surprising to find an apparent lack of evidence. According to the same logic of deception, apparent refutations of the theory could be explained away with equal ease. In his clinical practice, Freud worked on the assumption that his patients harbored a secret and unconscious desire to disprove his own explanations, so as to avoid having to confront their own repressed desires. If a patient dismissed his psychoanalytic interpretations of their symptoms or dreams, he interpreted this as evidence of “resistance” or “denial”, as predicted by the theory (Cioffi, 1998). If the patient ceded to Freud and accepted his latest explanation, of course this also counted in favor of the theory, namely as an instance of resistance overcome through therapeutic pressure.

According to Freud, unconscious resistance could even disguise itself in the form of manifest symptoms or dreams. For instance, when one of Freud’s patients dreamt about being forced to spend the holidays with her mother-in-law, whom she despised, at face value this seemed to belie Freud’s contention that every dream is a manifestation of an unconscious wish-fulfilment. But as Freud himself explained, the apparent refutation was really a striking confirmation: “The dream showed that I was wrong. *Thus it was her wish that I might be wrong, and her dream showed that wish fulfilled*” (Freud, 1953, p. 151).

Finally, Freud applied the same theoretical apparatus to his critics. Since every one of us is under the spell of the unconscious forces described by psychoanalysis, it was not surprising that critics of psychoanalysis tried to attack his brainchild. As Freud explained:

Psycho-analysis is seeking to bring to conscious recognition the things in mental life which are repressed; […] They [the critics] are therefore bound to call up the same resistance in him as in our patients; and that resistance finds it easy to disguise itself as an intellectual rejection and to bring up arguments like those which we ward off in our patients by means of the fundamental rule of psycho-analysis. (Freud 1957, p. 39)

It is tempting to reject such circular reasoning as a personal quirk on Freud’s part, but this “resistance argument” has been wielded by many later psychoanalysts, against both patients and critics of psychoanalysis (Borch-Jacobsen & Shamdasani, 2011; Crews, 2017).

# The Dynamics of Epistemic Black Holes

## Arbitrariness and Proliferating Alternatives

Because of their self-sealing character, epistemic black holes are extremely resilient against external challenges in the form of counterevidence or skeptical questions. This strong resilience, however, comes at a steep cost: the belief systems suffers from a problem of arbitrariness, in the sense that the available evidence is always congruent with many different versions, and there is no rational way to adjudicate between them. [[12]](#endnote-12)

For example, for any given historical event, it is always possible to develop multiple (unfounded) conspiracy theories involving different culprits, different objectives and different schemes. An event like the 9/11 attacks could be (and has been) interpreted as an inside job by the Bush administration, or a plot by the Saudi government or the Mossad, or the Jews more generally, or by any group of agents that is sufficiently powerful to cover up its tracks and make it look like Al Qaeda orchestrated the attacks.[[13]](#endnote-13) As for the murder of John F. Kennedy, a 2013 Gallup poll asked respondents if they believed that Lee Harvey Oswald acted alone and, if not, who was really behind the plot (Swift, 2013). After half a century of conspiracy theorizing and hundreds of books and articles disputing the official version of events, the results still proffered a wide array of culprits: the Mafia (13%), the federal government (13%), the CIA (7%), Cuba and Fidel Castro (5%), JFK’s own vice-president Lyndon Johnson (3%), the Soviet Union (3%), the Ku Klux Klan (3%), FBI director J. Edgar Hoover (1%), and various other actors. Following the logic of epistemic black holes, it is impossible to rule out the complicity of any of these potential culprits, provided that they have been careful enough to cover their tracks.

A similar problem of arbitrariness also affects other parameters of the conspiracy theory, such as the method being used by the conspirators. Most 9/11 conspiracy theorists believe that the Twin Towers were not brought down by the impact of the planes, as the official version claims, but by some other means. As to the precise nature of the mechanism, there is a wide array of conflicting viewpoints: some suspect a process of controlled demolition with conventional explosives, others suspect the use of exotic novel technologies like nano-thermite, while some even deny that the objects hitting the Twin Towers and the Pentagon were commercial planes at all, but could have been missiles, military planes, or digitally created CGI holograms (Aaronovitch, 2010).[[14]](#endnote-14) There is no rational way to discriminate between such competing conspiracy theories, because all of them are equally capable of accounting for the available evidence. As Harris (2018, p. 256) recently put it, “any number of conspiratorial explanations will fit the data, and hence will be equally supported.”

The problem of arbitrariness can also be observed in the domain of religion and supernatural belief. If you assume that one or more powerful supernatural beings exist, but they are actively hiding and resisting your investigation, the identification of these supernatural creatures and their attributes becomes to a large extent arbitrary. In philosophy of religion, this is known as the “problem of religious diversity” (Basinger, 2011). Many cultures have devised different belief systems about deities and other supernatural creatures, but these belief systems are often mutually contradictory and there is no rational way to adjudicate between them (Philipse, 2012). Even the choice between monotheism and polytheism remains essentially arbitrary. Is there a single supernatural creature pulling the strings behind the world’s curtain, or are we dealing with a genuine ‘conspiracy’ of different deities plotting together? In making his case for religious skepticism, Philo exposed this problem in David Hume’s *Dialogues*:

In such subjects, who can determine, where the truth; nay, who can conjecture where the probability lies, amidst a great number of hypotheses which may be proposed, and a still greater which may be imagined? […] And what shadow of an argument, continued Philo, can you produce, from your hypothesis, to prove the unity of the Deity? […] why may not several deities combine in contriving and framing a world? (Hume, 1998 [1779], p. 36)

Given that supernatural creatures are alleged to have powers that transcend those of human beings, or may even be omnipotent, it is impossible for mere mortals to find out.

In an analogous way, the history of psychoanalysis also illustrates the problem of theoretical arbitrariness. As Boudry and Buekens (2011) have shown, the conceptual core structure of psychoanalysis provides a sort of empty shell into which any number of rival theoretical notions can be inserted. In particular, while Freud’s original theory centered around the Oedipus complex and the notion of infantile sexual desires, later theorists have developed the theory in widely divergent (and often incompatible) directions. Otto Rank’s version of psychoanalysis reduces virtually every psychological complex to the repressed birth trauma, Alfred Adler unearthed inferiority complexes everywhere, Melanie Klein introduced the notion of unconscious breast envy as a counterweight to penis envy, Carl Jung developed the theory of unconscious archetypes (anima, persona, shadow), and so forth (Macmillan, 1997).

In the absence of any evidential constraints for fixing the parameters of conspiracy explanations, the psychoanalytic movement has often been beset by irresolvable theoretical disputes and schisms. In the words of Frederick Crews (1998, p. xxx), the epistemological structure of psychoanalysis renders the development of the psychoanalytic movement “drastically centrifugal, spinning off ever more numerous, mutually excommunicating schools and cliques” (see also Gordin, 2012, p. 202).

In the early modern witch hunts, the various misfortunes and disasters that occasioned witch hunts could also be “explained” in a variety of different ways, with different culprits and different mechanisms. In most cases such explanations did not need to be mutually exclusive, as different witches and different magic spells could be perceived as contributing to the same result (such as an illness or natural disaster). However, the most vivid demonstration of the arbitrary nature of witchcraft beliefs is that sometimes those who had initiated or commanded over the witch trials ended up on the stake themselves. The fact that skeptical arguments could always be disarmed was an attractive feature for witch hunters as long as witchcraft accusations were targeting *others*. But due to the arbitrariness of witchcraft explanations, the accusatory dynamics could easily spiral out of control, also targeting people who initially contributed to the trials.

Consider the fate of the richest man of the German city of Trier and president of its university, Dietrich Flade. Initially, Flade had supported witch trials, and in his role as town bailiff he even operated as a notably harsh witch-hunter himself. But at some point the alleged witches began to name Flade as one of their accomplices, and within the witchcraft doctrine it was difficult to counter that. Flade’s friends brought forward that he could not possibly be a witch, since he had persecuted witches himself. But this defense failed to have much of an impact. After all, were witches not always ingeniously trying to pull the wool over people’s eyes, for instance by presenting themselves as witch-hunters? On 18 September 1589 Flade was first strangled, and then burned in public in full view of almost the entire city population (Dillinger, 1999; Hofhuis, 2022).

In a similar vein—but in a less literal sense—believers in conspiracy theories and psychoanalysts also sometimes become “victims” of the very same conspiratorial logic that they directed towards others. For instance, when the influential French conspiracy theorist Thierry Meyssan suggested that on 9/11 the Pentagon was hit by some sort of missile instead of a passenger plane, other 9/11 conspiracy theorists went on to argue that Meyssan himself was a Deep State agent who had infiltrated into conspiracist communities to sow doubt and discredit the conspiracy theory community (Sunstein & Vermeule, 2009, p. 223). Analogously, the different schools of psychoanalysis after Freud have often turned on one another, explaining dissent in theory-internal terms. As historians of the psychoanalytic movement have observed, Freud made a habit of accusing renegade disciples of harboring some repressed desire or unresolved complex that warranted further psychoanalytic treatment. This recurrent “pathologisation of dissent” (Borch-Jacobsen & Shamdasani, 2011, p. 85) in the history of the psychoanalytic movement was the only way to delegitimize alternative conceptions of psychoanalysis, and thus to cover up the essential arbitrariness of the theory. Unsurprisingly, those renegade disciples returned the favor by directing this pathologizing logic at their former master (Borch-Jacobsen & Shamdasani, 2011; Sulloway, 1992).

In the case of the early modern witch persecutions we saw that the witchcraft doctrine benefited from the arbitrariness of invoking demonic illusions to make any finding fit their narrative. Ironically, their staunchest opponents used exactly the same line of reasoning. Many contemporary critics of witch-hunting argued that the witch-hunters had themselves fallen prey to diabolical deception (Hofhuis, 2022, pp. 310–329). In their view, the Devil was the evil designer behind the whole witch-hunt system, as he was eager to bring about the human suffering of the witch trials, as well as make people ruin their souls by killing the innocent. This is also how we should read Johann Weyer’s quote mentioned above about the “inextricable labyrinth.” In his view it was Satan who had created the illusory belief system from which no escape was possible: “From long experience, that crafty old weaver knows how to weave such webs skillfully.” (Weyer, 1998, p. 522)

The humanitarian goals of the witchcraft skeptics were laudable, but some of their arguments were as arbitrary as those of the witch-hunters. Whether people considered something real or illusory could eventually just depend on what seemed most convenient or plausible. The “trump card of demonology” is what Dillinger calls the idea of diabolical deception: it could be invoked to neutralize any ostensible phenomenon that appeared unfitting (Dillinger, 2018, p. 45).[[15]](#endnote-15)

## Cultural and Ideological Determinants

Because the empirical evidence alone can never fix the parameters of an epistemic black hole, this gives free rein to other and non-evidential factors. Typically, what we see is that the belief system will adapt to the local cultural environment, reflecting changing cultural sentiments and preoccupations. A striking instance is provided by the fate of antisemitic conspiracy theories about the dangers of ‘World Jewry’ during the past century. Prejudice and hostility against Jewish minorities has a long and sordid history in Christendom (and to a lesser extent in the Islamic world), dating back for many centuries. Nonetheless, contemporary forms of conspiratorial antisemitism, which obsesses over a world-spanning conspiracy of international Jewry, only emerged in the late 19th century (Arendt, 1951/2017; Pipes, 1999). In the wake of the emancipation and integration of Jewish people in public life in many European nations, and especially their prominent role in the world of finance and commerce, conspiracy theories emerged about Jewish organizations pulling the strings of the world economy. By the early 20th century, antisemitic conspiracism gained ascendancy throughout the Western world, appearing in both leftist and right-wing versions, and documents like the *Protocols of the Elders of Zion* were widely read, discussed and taken seriously. In the 1940s, the right-wing version of antisemitic conspiracism culminated in the genocidal fanaticism of Nazi Germany.

In the aftermath of the Second World War, however, Jews abruptly disappear from conspiracist literature (with the notable exception of Soviet Russia under Stalin). This had nothing to do with novel evidence, but with the almost universal abhorrence of Nazism. Most conspiracy theorists, even the ones who had promoted antisemitic conspiracies before the war, started to abandon or downplay the Jewish element and settled for other suitable culprits such as the CIA or FBI, a choice that reflected the ascent of the United States as the new global superpower. Other favorite targets became the United Nations and the Bilderberg group, a transnational organization of political leaders and other elites which holds annual conferences since 1954 and which, owing to its notorious privacy and secrecy, was an ideal target for conspiracy theorists. In short, this shift from Jews to other perpetrators did not reflect any novel evidence, but was driven by “changing social and political circumstances” (Byford, 2011, p. 97).

Shifting beliefs about the perpetrators and crimes of diabolical witchcraft also reflect cultural and ideological determinants. When the age of European witch-hunting began in the Western Alps around the year 1430, the purported crime was not yet specifically associated with women. Yet, within a context of widespread misogyny and unequal power balances between the sexes, it is hardly surprising that women were soon disproportionally targeted (around 75 to 80 percent of the victims were female). Women were widely viewed as more lustful, superstitious and irrational than men. So it made sense to think that it was relatively easier for the Devil to lure them into witchcraft through sexual intercourse and to make them abjure God (Rowlands, 2013). But the concept of witchcraft remained malleable enough to integrate other cultural and ideological trends. In the late sixteenth century, parts of Europe suffered from enormous economic distress, stimulating heightened aggression against allegedly corrupted elites who enriched themselves at the expense of others. Reflecting this trend, the witchcraft beliefs and subsequent trials increasingly began to focus on witches that were rich, male and powerful—the aforementioned Dietrich Flade is a case in point (Behringer, 2008, pp. 230–245; Dillinger, 1999; Hofhuis, 2022).

The history of psychoanalysis offers a similar example of how theoretical developments can reflect changing cultural environments rather than a changing evidence base. In the early days of psychoanalysis, Freud touted the concept of *penis envy* as one of the most important discoveries of psychoanalysis. In Freud’s account, the development of the female psyche revolves around the unconscious desire to possess a penis. As the little girl discovers that her body lacks the prized appendage, she develops an unconscious desire to possess a penis and accuses others of thwarting that wish or having castrated her. In the most favorable cases, the desire for a penis is later substituted for a desire to have a baby. Penis envy, according to Freud, was not a peculiar desire occurring in some women, but an unbending and universal law of female psychology.

In the second half of the 20th century, however, the doctrine of universal penis envy in women started to disappear from the psychoanalytic literature. It is unlikely that this theoretical change was driven by a changing evidence base, for Freud and his followers had confirmed the existence of penis envy in numerous cases, and the method of investigation itself remained unaltered. “When,” as the philosopher Frank Cioffi rhetorically asked, “did women stop wanting penises?” (Cioffi, 1998, p. 27 ). As in the case of the Jews disappearing from conspiracist literature, the notion of universal penis envy had just become ideologically unpalatable. Feminist critiques exposed the sexist and misogynist prejudices of Freud’s “phallocentric” theory of the female psyche, and some feminist psychoanalysts like Melanie Klein and Karen Horney proposed alternative concepts like *breast envy* and *womb and vagina envy* (Sayers, 1987). But these were equally arbitrary concepts, epistemically on a par with the original Oedipus complex. Just as the prominence or absence of “the Jews” in conspiracy theories reflected the changing cultural fate of antisemitism, the specific content of psychoanalytic theory tended to reflect changing cultural sensibilities rather than changing evidence (Cioffi, 1998).

# Conclusion

This paper has analyzed the warped epistemology and cultural dynamics of epistemic black holes, belief systems about invisible agents that are self-sealing and extremely resistant to external challenges. This epistemological analysis is intended to complement psychological explanations of the universal appeal of such belief systems, as well as more contingent historical and sociological accounts of their success in certain cultural environments. For instance, though it is plausible that the human mind has evolved tendencies to overdetect conspiracies (van Prooijen & Van Vugt, 2018), the extreme resilience of conspiracy theories to counterevidence and criticism also helps to explain their perennial appeal and cross-cultural persistence. The most notable examples of such epistemic black holes are unfounded conspiracy theories about historical events, but less obvious examples include Freudian psychoanalysis, as well as certain religious and supernatural belief systems, notably the cumulative concept of witchcraft in early modern Europe. By postulating clever invisible agencies that purposefully evade detection, these belief systems are by their very nature resilient against external challenges.

Based on this epistemological analysis, we have also tried to draw some parallels about the cultural development and dynamics of the respective belief systems. Most importantly, because of their extreme resilience to counterevidence, epistemic black holes suffer from a problem of arbitrariness and proliferating alternatives. As a result of this, such belief systems tend to be unstable and vulnerable to internal disarray, since believers can always come up with a rival version that accommodates the evidence equally well. In other cases, we see that the evolution of such belief system flexibly accommodates to changing cultural circumstances and sensibilities.

Finally, we believe that this epistemological analysis may be useful for pedagogical purposes. By understanding the self-sealing logic of conspiracy theories and other epistemic black holes, people may better appreciate the arbitrary and gratuitous nature of such beliefs. By appreciating how, using the same types of inferences and evidence, entirely different theories can be concocted that are equally plausible and equally compatible with the evidence, people might be better “inoculated” against the attraction of such unfounded belief systems (Norman, 2021, XXX).

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**References**

Aaronovitch, D. (2010). *Voodoo histories : the role of the conspiracy theory in shaping modern history*. New York: Riverhead Books.

Arendt, H. (1951/2017). *The origins of totalitarianism*: Penguin Classics.

Basinger, D. (2011). Religious diversity (pluralism). *Stanford Encyclopedia of Philosophy*

Behringer, W. (2008). *Witches and witch-hunts: a global history*. Cambridge: Polity Press.

Borch-Jacobsen, M., & Shamdasani, S. (2011). *The Freud files: An inquiry into the history of psychoanalysis*: Cambridge University Press.

Boudry, M. (2022). Why We Should Be Suspicious of Conspiracy Theories: A Novel Demarcation Problem. *Episteme*, 1-21. doi: 10.1017/epi.2022.34

Boudry, M., & Buekens, F. (2011). The Epistemic Predicament of a Pseudoscience: Social Constructivism Confronts Freudian Psychoanalysis. *Theoria, 77*(2), 159–179. doi: 10.1111/j.1755-2567.2011.01098.x

Boudry, M., & De Smedt, J. (2011). In Mysterious Ways: On petitionary prayer and subtle forms of supernatural causation. *Religion, 41*(3), 449-469. doi: 10.1080/0048721x.2011.600464

Boyer, P. (2001). *Religion explained: The evolutionary origins of religious thought*. New York (N.Y.): Basic Books.

Buenting, J., & Taylor, J. (2010). Conspiracy theories and fortuitous data. *Philosophy of the Social Sciences, 40*(4), 567-578

Byford, J. (2011). *Conspiracy Theories: A Critical Introduction*: Palgrave Macmillan.

Cioffi, F. (1998). *Freud and the question of pseudoscience*. Chicago: Open Court.

Clarke, S. (2002). Conspiracy theories and conspiracy theorizing. *Philosophy of the Social Sciences, 32*(2), 131-150

Cohn, N. (1967). *Warrant for Genocide: The Myth of the Jewish World-conspiracy and the Protocols of the Elders of Zion*: Eyre & Spottiswoode.

Crews, F. C. (1998). *Unauthorized Freud: doubters confront a legend*: Viking.

Crews, F. C. (2017). *Freud: The making of an illusion*: Profile Books.

Dennett, D. C. (1987). *The intentional stance*. Cambridge: MIT Press.

Dentith, M. R. X. (2018). *Taking conspiracy theories seriously*: Rowman & Littlefield.

Dentith, M. R. X. (2019). Conspiracy theories on the basis of the evidence. *Synthese, 196*(6), 2243-2261

Dillinger, J. (1999). *"Böse Leute": Hexenverfolgungen in Schwäbisch-Österreich und Kurtrier im Vergleich*. Trier: Spee.

Dillinger, J. (2018). *Hexen und Magie: 2., aktualisierte Auflage*. Frankfurt am Main: Campus Verlag.

Douglas, K. M., van Prooijen, J. W., & Sutton, R. M. (2022). Is the label ‘conspiracy theory’a cause or a consequence of disbelief in alternative narratives? *British Journal of Psychology, 113*(3), 575-590

Edis, T. (2019). Cosmic Conspiracy Theories: How Theologies Evade Science *Theology and Science: From Genesis to Astrobiology* (pp. 143-165). New Jersey: World Scientific.

Enders, A. M., Uscinski, J. E., Klofstad, C. A., Seelig, M. I., Wuchty, S., Murthi, M. N., . . . Funchion, J. R. (2021). Do conspiracy beliefs form a belief system? Examining the structure and organization of conspiracy beliefs. *Journal of Social and Political Psychology, 9*(1), 255-271

Farrell, J. (1996). *Freud's paranoid quest: Psychoanalysis and modern suspicion*. London: New York University Press.

Freud, S. (1953). *Standard edition. Vol. 4, (1900) The interpretation of dreams (first part)*. London: Hogarth Press.

Freud, S., Strachey, J., Freud, A., Richards, A., & Institute of Psycho-analysis. (1960). *The standard edition of the complete psychological works of Sigmund Freud. Vol. 6, The psychopathology of everyday life*.

Gellner, E. (1985). *The Psychoanalytic Movement: The Cunning of Unreason*. London: Paladin.

Gershman, S. J. (2019). How to never be wrong. *Psychonomic Bulletin & Review, 26*(1), 13-28

Goertzel, T. (1994). Belief in conspiracy theories. *Political psychology, 15*, 733-744

Goodare, J. (2016). *The European witch-hunt*: Routledge.

Gordin, M. D. (2012). *The Pseudoscience Wars: Immanuel Velikovsky and the Birth of the Modern Fringe*: University of Chicago Press.

Harris, K. (2018). What's epistemically wrong with conspiracy theorising? *Royal Institute of Philosophy Supplement, 84*, 235-257

Hofhuis, S. T. (2022). *Qualitative Darwinism: An evolutionary history of witch-hunting*: Utrecht University.

Hume, D. (1998 [1779]). *Dialogues Concerning Natural Religion (2nd ed)*. Indianapolis: Hackett.

Keeley, B. L. (1999). Of conspiracy theories. *Journal of Philosophy, 96*(3), 109-126

Keeley, B. L. (2007). God as the ultimate conspiracy theory. *Episteme: A journal of social epistemology, 4*(2), 135-149

Keeley, B. L. (2018). The Credulity of Conspiracy Theorists:  Conspiratorial, Scientific, and Religious Explanation. In J. E. Uscinski (Ed.), *Conspiracy Theories and the People Who Believe Them* (pp. 422-431): Oxford University Press.

Krause, V. (2015). *Witchcraft, demonology, and confession in early modern France*: Cambridge University Press.

Lakatos, I. (1970). Falsification and the methodology of scientific research programmes. In I. Lakatos & A. Musgrave (Eds.), *Criticism and the Growth of Knowledge* (pp. 91-196). Cambridge: Cambridge University Press.

Law, S. (2011). *Believing bullshit: How not to get sucked into an intellectual black hole*. New York: Prometheus.

Levack, B. P. (2016). *The Witch-Hunt in Early Modern Europe*. New York: Routledge.

Macmillan, M. (1997). *Freud Evaluated: The Completed Arc*. Cambridge, MA: MIT Press.

Mercier, H. (2020). *Not born yesterday: The science of who we trust and what we believe*: Princeton University Press.

Murray, M. J. (1993). Coercion and the Hiddenness of God. *American Philosophical Quarterly, 30*(1), 27-38

Napolitano, M. G. (2021). Conspiracy theories and evidential self-insulation *The epistemology of fake news* (pp. 82-106): OUP Oxford.

Napolitano, M. G., & Reuter, K. (2021). What is a conspiracy theory? *Erkenntnis*, 1-28

Nieminen, P., Boudry, M., Ryökäs, E., & Mustonen, A.-M. (2017). Biblical and Theistic Arguments Against The Evolutionary Argument Against Naturalism. *Zygon, 52*(1), 9-23. doi: 10.1111/zygo.12327

Nilus, S. (2009). *The Jewish Peril: Protocols of the Learned Elders of Zion*: Martino Pub.

Norman, A. (2021). *Mental Immunity: Infectious Ideas, Mind-Parasites, and the Search for a Better Way to Think*: HarperCollins.

Philipse, H. (2012). *God in the age of science?: a critique of religious reason*. Oxford: Oxford University Press.

Pigden, C. R. (1995). Popper revisited, or what is wrong with conspiracy theories? *Philosophy of the Social Sciences, 25*(1), 3

Pinker, S. (2021). *Rationality: What it is, why it seems scarce, why it matters*: Penguin.

Pipes, D. (1999). *Conspiracy: How the paranoid style flourishes and where it comes from*: Simon and Schuster.

Popper, K. R. (1959). *The logic of scientific discovery*. London & New York: Routledge.

Popper, K. R. (1963/2002). *Conjectures and refutations: The growth of scientific knowledge*. London: Routledge.

Remy, N. (2014). *Demonolatry: an account of the historical practice of witchcraft*: Courier Corporation.

Robertson, D. G. (2016). *UFOs, Conspiracy Theories and the New Age: Millennial Conspiracism*: Bloomsbury Publishing.

Roper, L. (2004). *Witch Craze: terror and fantasy in Baroque Germany*: Yale University Press.

Rowlands, A. (2013). Witchcraft and Gender in Early Modern Europe *The Oxford Handbook of Witchcraft in Early Modern Europe and Colonial America* (pp. 449-467). Oxford: Oxford University Press.

Sayers, J. (1987). Melanie Klein, psychoanalysis, and feminism. *Feminist Review, 25*, 23-37

Schellenberg, J. L. (2006). *Divine hiddenness and human reason*: Cornell University Press.

Shermer, M. (2022). *Conspiracy: Why the Rational Believe the Irrational*: Johns Hopkins University Press.

Sperber, D. (1996). *Explaining culture: A naturalistic approach*. Cambridge, Mass.: Blackwell.

Stanford, K. (2017). Underdetermination of scientific theory. *Stanford Encyclopedia of Philosophy*,

Stokes, P. (2018). Conspiracy Theory and the Perils of Pure Particularism. In M. R. X. Dentith (Ed.), *Taking Conspiracy Theories Seriously* (pp. 25-38): Rowman and Littlefield.

Sulloway, F. J. (1992). *Freud, biologist of the mind: Beyond the psychoanalytic legend*: Harvard University Press.

Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy, 17*(2), 202-227

Swami, V., Coles, R., Stieger, S., Pietschnig, J., Furnham, A., Rehim, S., & Voracek, M. (2011). Conspiracist ideation in Britain and Austria: Evidence of a monological belief system and associations between individual psychological differences and real‐world and fictitious conspiracy theories. *British Journal of Psychology, 102*(3), 443-463

Swift, A. (2013). Majority in US still believe JFK killed in a conspiracy. *Gallup*,

Swinburne, R. (2004). *The existence of God*. Oxford: Clarendon Press.

Urban, H. B., & Johnson, P. C. (2022). *The Routledge Handbook of Religion and Secrecy*: Taylor & Francis.

Uscinski, J. E. (Ed.). (2018). *Conspiracy theories and the people who believe them*: Oxford University Press.

van Prooijen, J.-W., & Van Vugt, M. (2018). Conspiracy theories: Evolved functions and psychological mechanisms. *Perspectives on psychological science, 13*(6), 770-788

Weyer, J. (1998). *Witches, devils, and doctors in the Renaissance* (G. Mora & B. G. Kohl, Trans.). Tempe, Arizona: Medieval & Renaissance Texts & Studies.

1. Philosophers now acknowledge that the notion of simple and straightforward ‘falsification’ is an unrealistic ideal in science. Theories rarely encounter definitive refutations, because they are always tested in bundles together with auxiliary hypotheses (XXX). [↑](#endnote-ref-1)
2. In recent years, a number of philosophers have challenged the notion that “conspiracy theories” suffer from some sort of general deficiency, arguing that every conspiracy theory should be evaluated on its own merits. For a defense of this “particularism”, see (Buenting & Taylor, 2010; Dentith, 2018, 2019; Pigden, 1995). For a defense of “generalism”, see (Harris, 2018; Napolitano & Reuter, 2021; Stokes, 2018). [↑](#endnote-ref-2)
3. In comparison with our approach, Napolitano’s account of “evidential insulation” (2021) places more emphasis on the psychological attitudes of believers. [↑](#endnote-ref-3)
4. A list of contemporary imprints of the *Protocols* can be found on Wikipedia: bit.ly/3qU7W7a [↑](#endnote-ref-4)
5. It should be noted that the U.S. government itself had also provided grist to the conspiracist mill by publishing an earlier report on 9/11 in 2002 (*Joint Inquiry into Intelligence Community Activities before and after the Terrorist Attacks of September 11, 2001*), in which 28 pages relating to links with Saudi Arabia were redacted, fueling suspicions of a cover-up. Even when these pages were declassified and released in 2016, however, this hardly put to rest the 9/11 Truth movement. Because surely we would not expect the U.S. government to admit to its own complicity? [↑](#endnote-ref-5)
6. “We alternate these days of victory and defeat among people so that Allah may reveal the true believers, choose martyrs from among you […] Do you think you will enter Paradise without Allah proving which of you truly struggled for His cause and patiently endured?” (Quran 3:137-140). [↑](#endnote-ref-6)
7. Earlier, Karl Popper (1963/2002, pp. 165-166) speculated that modern conspiracy theories are secularized versions of religion. Just as Homer explained everything that happened on the battlefield of Troy in terms of the various alliances and antagonisms of the gods, so modern conspiracy theorists explain world events as resulting from the actions of a small group of powerful beings plotting behind the scenes. [↑](#endnote-ref-7)
8. Even nominally monotheist religions are often not strictly monotheist in practice, since they include a range of lesser supernatural creatures such as angels, demons, saints, or ghosts (Boyer, 2001). [↑](#endnote-ref-8)
9. For a recent exploration of the complex relationship between religion and secrecy, see Urban & Johnson (2022). [↑](#endnote-ref-9)
10. Past historians have often argued that witch persecutions were a shrewd tool, used to achieve some hidden end, like oppressing women, destroying traditional peasant culture, making money, or subjugating the poor. However, experts have now come to the conclusion that many witch persecutions were more likely driven forward by genuine panics about the alleged dangers of witchcraft. As Julian Goodare says it: “a witchcraft accusation was not ‘really’ about something else; it was really about witchcraft.” (2016, p. 385). [↑](#endnote-ref-10)
11. The analogy between Freudian psychoanalysis and medieval demonology may even extend further. In the early days of his psychoanalytic career (around the 1890s), Freud took the extracted childhood “memories” of his patients about grisly sexual and sadistic abuse (which were in reality confabulated under intense pressure by the therapist) as phylogenetic memory traces of a “primeval devil religion” which practiced ritual sexual abuse. Furthermore, Freud speculated that the confessions extracted under torture during the European witch trials derived from *actual* memories of infantile sexual abuse, teased out by “the harsh therapy of the witches’ judges” (Crews, 2017, pp. 498-505) [↑](#endnote-ref-11)
12. Logically speaking, a theory is always ‘underdetermined’ by evidence, in the sense that one can always come up with alternatives that are logically compatible with the available evidence, no matter how much evidence is being gathered. But though this logical problem of ‘underdetermination by evidence’ is widely accepted in philosophy of science (Stanford, 2017), in scientific practice there are multiple ways of rationally discriminating between rival theories (e.g. simplicity, fecundity, coherence). The arbitrariness characteristic of epistemic black holes runs deeper: for any amount of evidence, one can always come up with multiple rival theories whose explanatory virtues are *equally good* (or bad). [↑](#endnote-ref-12)
13. In practice, of course, there may be *some* constraints on the answers to the *cui bono* question, since not anyone will have a plausible motive (XXX). [↑](#endnote-ref-13)
14. ‘Debunking the 9/11 Myths: The Airplanes’, *Popular Mechanics*, Sep. 10, 2021. https://www.popularmechanics.com/military/a5654/debunking-911-myths-planes/ [↑](#endnote-ref-14)
15. Translated from the German original: “Joker der Dämonologie.” [↑](#endnote-ref-15)