

Chemtrails: Better understanding a modern-day conspiracy theory rooted in 1950s milieu

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Introduction

In the 1950s, American culture fundamentally shifted in ways that are still relevant in modern society. The decade saw unforeseen advances in technology, a general popular anxiety that stemmed from atomic energy's proven effects and theorized possibilities, and spikes in distrust toward scientists as the age jolted the United States into a total shift toward scientific absolutism. Among the decade's broad effects still indelibly etched into present-day American society is a conspiracy theory with its roots in 1950s historical, political, and cultural elements. The conspiracy theory, first documented in the 1990s, is that of chemtrails: the belief that the long-lasting streams of condensation left behind airplanes are part of a vast, nefarious plot that is multi-faceted in its hypothetical intentions and outcomes.

The basis for chemtrails stems from a complex network of events and cultural ideologies happening or beginning in the 1950s. In looking at 1950s texts and historical events surrounding weather modification, newly emerging technologies, and government testing programs, there are rhetorical themes that echo what the eventual chemtrail conspiracy theorists circulate in their own rationale. A further examination of the rhetoric of chemtrail conspiracy believers in online sources such as forums illuminates the implicit and explicit links between real 1950s events and the conspiratorial framework that aims to prove the existence of the chemtrail plot. The decade's technological advances, Cold War geopolitical contention, weapons testing, and government weather modification programs together weave a foundational web, which decades later became the basis for this modern-day conspiracy theory.

The link between the 1950s roots for the chemtrail conspiracy theory is manifest both implicitly and explicitly. Overtly, chemtrail conspiracy theorists draw "evidence" from historical documents proving that weather modification, a supposed goal of chemtrails, began in the 1950s.

Less obvious as an impetus for this theory, however, is the tie to the attitudinal shift toward a distrust in science and technology that began as science saw a revolution in postwar 1950s America. As outlined below, current distrust in scientific institutions and facts, tied to fear of the powers of technology and an anti-elitist type of anti-intellectualism conceived of by Hofstadter (1963), is the crux of ongoing conspiracy theories whose basis are directly related to the intimidating, mysterious nature of technology. Here, I argue that the dramatic leaps in technological capabilities in both the 50s and today are fundamental roots in the complex web of allegedly sinister technological capacities, malicious scientific and governmental actors, and the rejection and suspicion of scientific fact and authority that are core to the chemtrails conspiracy theory.

Conspiracy theories

In combining several definitions of conspiracy theories, they are best defined as a network of beliefs that explain how various powerful actors and institutions collude toward a self-serving goal, intentionally obscured from the general public, that is nefarious and harmful to the masses (Douglas & Sutton, 2008; Goertzel, 1994; Wood & Douglas, 2013; Zonis & Joseph, 1994; Douglas 2017).

The theorized and empirically established reasons for belief in conspiracy theories are numerous. One of the earliest authors on the rationale behind conspiracy theorists' musings was Richard Hofstadter (1965), who identified their theories as based in a paranoid style, channeling the psychological rhetoric of the era. Hofstadter's essay, "The Paranoid Style in American Politics," was a first in its exploration of the foundations for what he calls "the qualities of heated exaggeration, suspiciousness, and conspiratorial fantasy" that define conspiracy theories (Hofstadter, 1965: 3). In invoking the psychological term *paranoid*, he appeals to the

psychological sensibility popular in this era, stemming from the rise in Freudian and Jungian psychology. The distinction that he makes between the clinical term and his meaning as it relates to American politics and conspiracy theories is crucial. The unifying characteristics of the clinical and political paranoiacs are their tendency to be “overheated, oversuspicious, overaggressive, grandiose, and apocalyptic”; the distinction is that the latter finds that this orchestrated aggression is directed not only against the individual but “against a nation, a culture, a way of life” that affects the masses (Hofstadter, 1965: 4).

While he focuses primarily on the American extreme right as the definitive peddlers of paranoiac conspiracies (e.g. McCarthyism; Arizonans opposing gun control measures in the wake of Kennedy’s assassination as an attempt to control the American populace), he details a wide array of conspiracy theories that span epochs, countries, and cultures. He theorizes that these world-views are primarily driven by feelings of powerlessness and uncertainty in these individuals, and that ultimately these overly simplistic explanations serve as a sense-making tool for the creators and believers.

Hofstadter’s theories are bolstered by later works that explore psychological motivations for believing in conspiracy theories. Douglas (2017) outlines and adds evidence to three principal motivations: the epistemic, the existential, and the social. In the most basic sense, conspiracy theorists are driven by the (epistemic) need to discover knowledge that offers a causal explanation for events or phenomena. Further, the same causal explanations that conspiracy theorists seek for epistemic reasons become more complex to meet their existential needs: these explanations make people feel safer in light of scary, otherwise inexplicable events. Lastly, conspiracy theorists are driven by a social need to belong; specifically to belong to an in-group that is contrary to, and even fighting to thwart, some external nefarious behavior or plot.

Researchers have also established individual attributes that determine the tendency to believe in conspiracy theories. Feelings of isolation and powerlessness within society are strongly associated with conspiratorial beliefs (Hofstadter, 1965; Moulding et al, 2016; Swami & Coles, 2010). A general uncertainty in the context of current events—big or small—is another contributor (Douglas, 2017; Moulding et al, 2016). When people feel that the world's moral standards are rapidly changing or simply absent (e.g. normlessness), they respond by belief in conspiracy theories (Moulding, 2016). A recent study showed that the sheer need for uniqueness, that is, to stand out from the mainstream ways of thinking or conceiving of the world, also drives this way of thinking (Imhoff & Lamberty, 2017).

There are also larger-scale societal factors that mirror these individual characteristics and psychology when it comes to the spread of conspiratorial views. Conspiracy theories are not unique to the United States, to western culture, or to modernity (Hofstadter, 1965; Uscinski & Parent, 2014; van Prooijen & Douglas, 2017). In an analysis of how societal crises across centuries and cultures attribute to the rise in conspiracy theories, van Prooijen & Douglas (ibid) found that they generally see an influx when a group of people (e.g. nation) must confront a societal crisis situation. Conspiracy theories provide categorical explanations for complex and unsettling events by blaming a powerful invisible network; they further provide guidance for which elements and actors in a society are to be trusted, and which are not (ibid). Just as they quash micro-level fears of an absence of norms or order, they likewise subdue collective feelings of anxiety and insecurity in a society, as they make sense of seemingly or verifiably abnormal phenomena (Douglas, 2017; Hofstadter, 1965; van Prooijen & Douglas, 2017).

Another finding regarding the belief in conspiracy theories is that the precedent of true, despicable conspiratorial events leads to strong perceptions that similar events are likely to re-

occur (Bratich, 2006; Moulding, et al., 2016). Moulding et al (2016) provide the example of the Tuskegee Syphilis Experiment, a legitimate medical conspiracy that occurred between 1932 and 1972, serving as the basis for theories about HIV/AIDS being used by the American government for African American genocide. Similarly, revelations issued by the CIA in the 1970s about their own covert, unethical practices including mind control experiments on unknowing citizens (MKULTRA), weather modification, and nuclear weapons testing decades earlier in the 50s lay a foundational framework on which conspiracy theorists later base theories, often but not necessarily involving the CIA or other intelligence agencies.

There is a large base of research that explores the psychological, attitudinal, and societal factors that determine the belief in and spread of conspiracy theories. Hitherto research, however, has not wholly examined the role of sudden technological leaps (e.g. nuclear energy in the 1950s; increasingly more precise weather control mechanisms in the present-day) and their association with a rise in conspiratorial beliefs. In a content analysis of more than 100,000 letters to the New York Times from the 1890s through 2010, the only true peaks in conspiracy theories among these decades were in the 1890s and the 1950s (Uscinski & Parent, 2014). These two eras share the confluence of drastic technological advances and societal change, suggesting evidence for Bratich's (2006) claim that the collision of these two elements lead to higher proliferation of conspiracy theories.

While foundational in the study of conspiracy theories, and still relevant in many ways demonstrated above, Hofstadter's theories about the paranoid nature of conspiracy theories do not fully serve to explain the contemporary style of conspiracy theories (Bricker, 2013; Darsey, 2002). In Darsey's (2002) prosaic description, contemporary thought on conspiracy theory:

inclines toward the notion that Richard Hofstadter's mid-century, totalizing, stable, declarative reassuringly complete, omnipotent conspiracies have been superseded by postmodern, fragmented,

unstable, interrogatives, that provides more doubt, uncertainty, anxiety, even ironic detachment than direction for resistance (469).

Darsey subsequently demonstrates that the “highly technical language” essential to scientific explanation is used by conspiracists as evidence itself of a vast conspiracy (475). Further than the scientific jargon, he maintains, is that the typical scientific rationale “often lacks both visibility and immediate plausibility” to laypeople (475). Therefore, science (and technology), with an inherent need for particular, highly technical knowledge, not only limits itself to a small portion of the population, it allows that same small portion to dictate facts to the masses, who do not know how to interpret the full extent of scientific discovery. This in itself is, in the mind of the conspiracist, directly out of the conspiratorial playbook. The mystery of what could possibly, potentially, perhaps be obscured in the mysterious world of science, and technology by proxy, is limitless, and this is what drives many conspiracy theories—particularly those based around science, health, or technology.

Using the chemtrails conspiracy theory as a case study, I argue that the unprecedented and sudden scientific and technological advances in the 1950s spawned a new, widespread distrust in science and intellectuals, distinct from prior episodes of such distrust, that not only pervades in today’s conspiracy theories, but which will expand as conspiracy theories continue to center around and depend on scientific and technological progress. Throughout, I present an examination of chemtrail conspiracy theory discourse from public online forums to highlight technology’s perceived role as the great obfuscator within these conspiratorial arguments.

Sample

The chemtrail conspiracy theory discourse pervades Internet forums, social media, and traditional webpages (see Cairns, 2016; Tingley & Wagner, 2017 for an extensive list). Due to

this paper's limited scope, the samples within this paper consist of the first known digital account of chemtrails and relevant Reddit forums, colloquially known on the website as "subreddits".

These forums are representative of the general perceptions of and arguments for chemtrails found in other websites.

To prove ties to the theory's 1950s roots, I present evidence from the decade used in Reddit conspiracy theorists' own arguments, which tout the documents as "evidence" of chemtrails. I additionally establish proof of the more implicit links between anti-elitist anti-intellectualism that was borne from 1950s culture and atomic fear.

Chemtrails: Poison in the Sky

The chemtrails conspiracy theory is a worthwhile point of study. A poll in the Cooperative Congressional Election Study (CCES) revealed that around 10% of Americans fully believe in their existence; an additional 30% believe in some form of the conspiratorial plot, meaning nearly 40% of the American population in total (see Tingley & Wagner, 2017). So what exactly is a chemtrail? By and large, believers tend to distinguish them from "normal" airplane contrails as lasting longer and turning into clouds; many claim that they form specific designs (e.g. X's or cross-hatched grids). As with the best conspiracy theories, there is no singular motive or effect. Some say they are linked individually to plots for weather modification, population control, mind control, obscuring "something" in the sky, and fighting climate change; others maintain that all these reasons are part of the plot. Similarly, the actors at play are believed by some to be individually involved and by others to be an integrated network. An incomplete list, given the unending potentiality of the chemtrail theory, of the actors responsible: CIA, U.S. Air Force, NASA, a mysterious and unknown "supranational power", or the U.S. government. Recent revelations about the increasing possibility of geoengineering, a form of weather modification

that echoes scientific discoveries of the mid-20th century and approximates them to fruition at unforeseen levels, have spurred additional accusations among these theorists that they were right all along. To best understand this trajectory, we must visit what is typically deemed the first depiction of chemtrails (Cairns, 2016).

The Origins of a Conspiracy Theory

"There is a lot of Lupus in the area now. A lot of women have come down with it."
 - Contrails: Poison from the Sky

The first traced account of chemtrails is a 1999 piece¹ penned by William Thomas ("Contrails: Poison from the Sky") and contains a fascinating amalgamation of factual and fictional technical language. Thomas provides accounts of people in Washington state, Oklahoma, and California who allegedly reported being sick after seeing these contrails in intricate formations in the sky.

He immediately invokes technical language via the account of one victim:

Wallace wonders if ethylene dibromide, a highly toxic component of JP-8 jet fuel, is making people sick.

Using the technical jargon of scientists, Thomas aims to show his own knowledge of the topic, as well as the legitimacy of his eyewitness. His choice of interviewees (dentist, former judge, former missile engineering technician) whose professions he states is another attempt to make his theory seem reputable. Two other excerpts represent the theory's basis in mimicking scientific language:

The huge Xs being traced by formations of tanker jets in the sky can be tracked by satellite and coordinated with the crossed-beams of ionospheric heaters to heat the upper atmosphere - changing its temperature and density and enhancing the storm's effects.

Pseudo-color, multispectral images taken April 20, 1994 by a NOAA satellite, reveal a number of contrails over Oklahoma and Kansas. X'es, overlapping W's and the Roman numeral XII are among the patterns flown by the mystery aircraft.

¹ <http://www.netowne.com/environmental/contrails/willthomas/contrails.htm>

Notable in the first excerpt, apart from this attempt at technical language, is the vapidness of the declaration. He uses big words, proves he knows the jargon (its existence at a minimum) but does not add anything substantially related to his claims. The biggest revelation here is that contrails can be tracked; the flowery language is a façade to make his words seem legitimate. Notable in the second (again, apart from his attempt to seem technical) is the use of the word *mystery*. Overall, Thomas's piece has a tone of mystery and collusion; he uses the word *mystery* four times. A thread throughout Thomas's initial piece and the present-day chemtrail rhetoric is that no one knows who the planes belong to—a mysterious nature that is characteristic of conspiratorial arguments. Also notable is the tie Thomas makes to the U.S. military. He cites an Air Force Report, "Weather as a Force Multiplier," that claimed that the U.S. would "own the weather" by the year 2025. This link reflects sentiments attributable to 1950s government weather modification experiments, and also resurfaces in contemporary rhetoric about chemtrails that links them to military or government powers, both of which are explored below.

The author's posited distinction between contrails and these new insidious jet trails is that:

Unlike normal contrails, which dissipate soon after a lone jet's passage, video taken by Wallace and Hanford show (sic) eerily silent silver jets streaming fat contrails from their wingtips in multiple, criss-cross patterns. But instead of dissipating like normal contrails, these white jet-trails coalesce into broad cloud-bands that gradually occlude crystal clear skies.

He also attempts a scientific definition of contrails to further distinguish:

Contrails can form through the addition of water vapor to the air from the jet engine exhaust. Even tiny nuclei released in the exhaust fumes may be sufficient to generate ice crystals, and hence, condensation trails.

His definition, however technical it may sound, reveals his own ineptitude in understanding what they are. In a joint report by the Federal Aviation Administration, NASA, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the institutions

sought to clarify (“in response to public inquiries”) the definition of contrails². They offer this description, contrasting with the version invented by Thomas:

A contrail will form if, as exhaust gases cool and mix with surrounding air, the humidity becomes high enough (or, equivalently, the air temperature becomes low enough) for liquid water condensation to occur

Where Thomas uses empty, superfluous lingo (“tiny nuclei”), and overcomplicates his definition, the government report succinctly summarizes. In short, contrails form due to jet exhaust in conditions that are either humid enough, or cold (high) enough. But his goal is clear: he co-opts the jargon of science to appear reputable.

Contrails: Where are They Now?

The theory has evolved since its first days but still clings to some of its original claims and argumentative tactics. William Thomas’s distinction between contrails and chemtrails is by and large the same distinction touted contemporaneously by believers online today. A user from the subreddit³ “Chemtrails” (username in parentheses, throughout) summarizes:

I’ve only seen a contrail once. During a foggy day, a passenger jet was landing, and the contrails were coming off of the tips of the wings (not the engines), but they were long, and they visibly swirled in a vortex motion and dissipated within 20 seconds maximum. Chemtrails fan out and form fluffy edges. (crestind)

Harking back to the theory’s pseudoscientific roots, chemtrail rationale can also be found in the subreddit⁴ “Chemtrail,” whose description is:

Fact-based chemtrail discussions. This subreddit is designed to separate the truth from fiction in the chemtrail debate and to steer the conversation towards reality rather than paranoia.

The most revelatory element of this forum is its claim to argue the existence of chemtrails from a factual (read: scientific) perspective. The “pinned post” at the top of the page, a sort of guiding

² https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/media/contrails.pdf

³ <https://www.reddit.com/r/Chemtrails/>

⁴ <https://www.reddit.com/r/Chemtrail/>

beacon in internet forums like this, contains well-sourced links⁵ from reputable publications (*The Guardian*, *Live Science*) that are commonly cited evidence in other online forums⁶. The emphasis on fact mirrors scientific reasoning, aiming to paradoxically refute science with fact. Additionally, of the nine posted links, five pertain to covert government testing performed in the 50s. Only one of the articles pertains to events that happened before the 50s—the British government testing biological germ warfare on its own people beginning in the 1940s. This sort of testing, however, is inextricable from the Cold War military testing, which is so definitive of the 50s, performed to ensure proper defense in the possibility of a Soviet attack. Similarly, the three articles whose events occurred in the 60s or later were all directly catalyzed by 1950s technological experimentation, geopolitical relations, and fear of communism. Thus, all linked sources are historical and directly pertaining to events in the 1950s. These sources never confirm the existence of chemtrails, and they're not supposed to; after all, that would destroy the conspiracy. These sources are meant to show the *possibility* of a conspiracy: the technology exists, and has been used many times on unwitting private citizens. Thus, the believers argue, who's to say the same thing isn't being done to us right now? This line of thinking further supports the aforementioned findings by Bratich (2006) and Moulding et al (2016) that the occurrence of nefarious events increases belief that they will re-occur.

While the “fact-based” angle at chemtrails provides an interesting representation of the scientific jargon that attempts to explain them, another subreddit, “Chemtrails,” offers more dialogue on the subject, including non-believers who prompt discussion on the matter. A post

⁵ The links posted are the following: www.theguardian.com/politics/2002/apr/21/uk.medicalscience, www.livescience.com/23795-large-area-coverage-dangers.html, www.livescience.com/40686-mystery-radar-blob-explained.html, en.wikipedia.org/wiki/Project_112, en.wikipedia.org/wiki/Operation_Popeye, en.wikipedia.org/wiki/Project_Stormfury, www.theguardian.com/uk/2001/aug/30/sillyseason.physicalsciences, en.wikipedia.org/wiki/Operation_Sea-Spray, en.wikipedia.org/wiki/Operation_Big_Buzz

⁶ See Cairns (2016) for a list of chemtrail apologist websites.

from November 3, 2018 asks, “what do you think [chemtrails] are/do and why? And who do you think is behind it?” The responses say that chemtrails are for:

Weather control:

some type of weather engineering (Buttchuckle)

Part of it is weather control, allegedly the long fibers are some sort of protein... probably some biological agents involved. (crestind)

I think it's to combat the rise of global temperatures by deflecting sunlight. (Squand0r)

Mind control:

There's a theory that cosmic rays helped humanity evolve. New-agers are currently talking about rays of cosmic energy that are coming to awaken humanity. The chem trails may be there to block those rays... to keep us from awakening to the fact that we are spiritual beings... to keep us in slavery. (CitizenLuke117)

Population control:

...some form of population control it's already been scientifically proven that male sperm counts are down at a very high percentage... (Buttchuckle)

Chemical dispersion:

some mixture of chemicals that are specifically designed to attack or (sic) respiratory systems as well as our gastrointestinal systems (Buttchuckle)

Hiding “something”:

Simple, can you see behind clouds? Me either (sic), seems like a an (sic) interesting way to hide something if you were so inclined (mava417)

As observed, the line of reasoning behind chemtrails’ effects is spectral, vague, and open to a wealth of possibilities. All are possible individually, in any combination, and for any conceivable motive. The sense of mystery that is present in William Thomas’s account of chemtrails pervades these forms. As concerning who exactly the bad actors in this drama are:

It's obvious who is behind it. The us government . (Buttchuckle)

...the strange thing is you see it in Europe. But even stranger you see it in Russia too... something is clearly not as it seems. So called antagonistic parties like Russia vs USA/Europe may actually be controlled on some level by a single group? It's in China too... whatever organization this is wields supranational power... (crestind)

Likewise, the maligned actors who are responsible are allegedly known by some chemtrail believers and still mystify others. One user even posits that some sort of “supranational” actor is at hand, suggesting the existence of an entirely unknown and mysterious organization, obscured from public knowledge.

Another essentially mysterious piece of the chemtrail puzzle is what exactly the chemtrails consist of. In true conspiratorial fashion, the allegedly harmful chemical streams above our head are visible, yet out of reach. There is a fundamental divide between the online laymen and the scientists and military personnel who allegedly have access to verify these trails’ chemical makeup. If we wanted to test a sample, how could we without the access that scientists and military personnel have? Relying on scientists for veracity regarding the chemtrail composition would be fruitless; any results released would be fabricated since they are part of the conspiracy. This further provokes belief that the chemtrails are real, and that these laypeople, despite never having sampled or tested a chemtrail, know exactly (maybe) what they are:

I know for a fact there are at least five different materials (crestind)

they can load these planes up with anything they want from genetically modified diseases too (sic) full blown biological weaponry and spread over our heads and neither one of us will know the difference until it's too late that's the scary part (Buttchuckle)

There is tons of lithium and neonicotinoids up there. (Sinkiy)

gmo's (sic), fluoride and other things add to the demise of our health. It's a cumulative of many things, some we might not even know of now. (ZeerVreemd)

The possibilities of chemtrails are endless: from the controlling actors to the actual effects, they can be made of anything, intended for anything, and sent from anyone. Throughout chemtrail rhetoric, the mention of other conspiracy theories related to public health (e.g. GMOs, fluoride, climate change) is ubiquitous. So is the tie that these conspiracies have to the scientific community, which possesses an unforeseen level of technological ability, particularly to control nature—largely made possible by Einstein’s calculations of the 40s and more concretely the

development of nuclear weapons. Presently, the divide in knowledge and access between laypeople and scientists is experiencing another rupture, with the worsening rate of climate change catalyzing scientists to discuss unpopular potential methods of treatment, which are reminiscent of other weather modification methods that are rooted in the 50s.

Geoengineering

As the societal crisis of climate change cements itself as fact in the eye of the American public, solutions are being introduced to the public. Among these solutions is geoengineering, defined by Oxford English Dictionary as “the modification of the global environment or the climate in order to counter or ameliorate climate change”⁷. Proponents of the chemtrail theory are co-opting the existence and public revelation of geoengineering and using it as further proof of their beliefs. In their study of social media discourse around geoengineering from 2008 through 2017, Tingley and Wagner (2017) found that 61% of the mentions of geoengineering to be conspiratorial in nature and specifically related to the existence of chemtrails. Geoengineering presents a challenge to refuting the chemtrail argument. It provokes rational doubt: since we know weather modification in some form is possible, and we know that geoengineering is being openly considered as an antidote to climate change, chemtrails could fully or partially be that solution (Cairns, 2016; Tingley & Warner, 2017). Tingley & Warner (ibid) found in the same study that online geoengineering discussion spiked significantly in January 2015 and April & May 2017. They associate these spikes with two specific events: the former with the publication of the US National Academy of Science’s “comprehensive set of reports on carbon and solar geoengineering” (ibid, p. 3); the latter with Harvard’s Solar Geoengineering Research Program.

⁷ <http://www.oed.com/view/Entry/276250?redirectedFrom=geoengineering#eid> (accessed 6 December 2018)

Further, there is discord in the scientific community about whether this is the best solution; this disagreement in an institution that is defined by its objectivity strengthens the public's doubt, similar to Darsey's (2002) case study on the AIDS conspiracy. This is likely why the topic of chemtrails has grown since its 1990s genesis, as seen in excerpts that invoke mention of geoengineering. One post⁸ from the broader subreddit⁹ "Conspiracy," entitled "Geoengineering, long denounced as a conspiracy theory, now openly advocated by Harvard scientists to alter the climate" and posted by user NRFUY, conflates geoengineering with chemtrails. This erroneous association surfaces in the comments:

They aren't necessarily a nefarious practice or big secret...it's just weather modification. However, what is possibly nefarious and a big secret is just how advanced this technology is. To what extent can they actually control the weather? Are they capable of inciting (un)natural disasters like hurricanes and tsunamis? Imagine the potential for destruction they could have with this. (RemixxMG)

Monsanto does it to kill non Monsanto produce/production through targeted GMO receptors. Gives people cancer, but it creates profit for Monsanto. Another theory I read is that it's a geoengineering experiment that is classified, as it violates UN legislation. Something about iron fertilization to spawn an artificial plankton bloom. (reformedman)

I think it's more used for weather modification, and the potential health affects are being observed after the fact. Like most government projects that seek to control the environment, we find out about their ill health effects in the long term (FramingHips)

There are some good books on this topic, i can't say whether or not they are spraying biological agents on us, but they do actively engage in geoengineering (Suffocatingsky)

Science is not God or truth. Science is merely a tool for explaining observation. For thousands of years inaccurate beliefs of the day are shoved down our throats as fact to support social and economic agendas. In developed worlds it is science as religion, not to be questioned. Scientists are run out of town if they question and present theory that goes against accepted norms. (kekbringstheight)

Here, the conspiracy theorists argue that what we see in front of us is not all there is.

Additionally, they make pejorative remarks toward scientists, with one user believing that the scientists that challenge proven scientific fact are "run out town," suggesting that even if a scientist wanted to reveal the full nature of the conspiracy, she would be blacklisted. Further,

⁸ https://www.reddit.com/r/conspiracy/comments/69cox1/geoengineering_long_denounced_as_a_conspiracy/

⁹ <https://www.reddit.com/r/Conspiracy/>

they argue that the big secret is “just how advanced this technology is,” harboring doubt that we will ever really know what is fully going on—until it’s too late. This way of arguing creates a buffer for the conspiracy rationale from every direction. If only the scientists responsible contain the key, but they are in on the conspiracy, or unwitting accomplices, or banned from the scientific community for defecting, the answers are unknowable.

Weather modification, however futuristic it may seem, is not new in American discourse. Fleming (2006) presents a comprehensive chronicle of these experiments, dating back to the 1830s. In 1950s America, spikes in technological advances and the sustained threat from the Soviets at the dawn of the Cold War meant the decade was a time of unprecedented experimentation by the federal government and laymen¹⁰. Believing they were on the vanguard of the next crucial weapon of the Cold War, American government agencies and scientists poured resources and time into the study of weather modification (Fleming, 2006). In 1946, after a General Electric scientist incidentally discovered the possibility of intentional weather modification in his freezer, a *New York Times* write-up publicizing this budding technology followed. General George Kenney claimed in 1947 that “The nation that first learns to plot the paths of air masses accurately and learns to control the time and place of precipitation will dominate the globe.” (NYT (15 June 1947), 46, 1). Indeed, the new technology was of particular interest to the military, as Joseph Stalin announced his 1948 “Great plan for the transformation of nature” and the United States government was eager to compete with Soviet technological strides in every arena, particularly those relating to national safety and defense. In the 1950s, weather modification seemingly solidified itself as a believable, possible concept that several

¹⁰ <https://www.metabunk.org/popular-science-1958-weather-as-a-weapon.t660/>

publications¹¹ reported on at the time, including the *New York Times* throughout the decade. Eisenhower's weather advisor, Harold Orville, believed full-scale weather control would be possible with decades of research, as published in *Collier's* in 1954¹². Other publicly accessible documents by high-level government officials in the 1950s touted its potential for agricultural control, economic and political disruption, and changing the course of hurricanes

Investigation shows, however, that these possibilities were far-off in the future at best. Claims of weather modification throughout the 1950s include: creating precipitation for a swath of farms in the Midwest, a "rainmaker" hired (and subsequently sued) by New York City, and a company who was "cloud seeding" more than 130 million acres of agricultural land in the American west (Fleming, 2006). In chemtrail discussions online, the ubiquitous (and glaringly fictitious) example of layman's experimentation with this elusive, nebulous technology is that of Wilhelm Reich, who claimed that his "Cloudbuster" used so-called "orgone" energy that consists human libido to change meteorological conditions¹³ (Cerveny, 2011). His claims, however, went unsubstantiated and yielded nothing but coincidental rain. In a sad ending, his saga ended with his persecution by the FDA for selling his weather changer across state lines, and his death in prison in 1957. Now he is a martyr for many chemtrail believers, proof that scientists who think against the grain are a threat to the powers that be, and apotheosized in his death. The reality is that these cases are wholly fictitious or limited in scope: they only had negligible effects and changed weather conditions only a fraction of what they claimed, if at all. Fleming (2006) posits that these public declarations of weather control technology by high-level U.S. officials were a

¹¹ See: "Principles and Heresies: The Bigotry of Science" (*National Review*) by Frank Meyer for a stern critique of the dogmatic scientific community.

¹² See: "A Power More Menacing than the H-Bomb will be wielded by the first nation that learns how to use: Weather as a Weapon" <https://www.metabunk.org/popular-science-1958-weather-as-a-weapon.t660/>

¹³ Reich, an Austrian psychoanalyst, worked with both Freud and Einstein.

red herring to demonstrate technological superiority over the Soviets, who had boasted of their own progress toward weather modification. Despite the lacking evidence that these plans had truly come to fruition as claimed, the possibility of weather modification took hold of the American public. In their analysis of letters about conspiracy theory written to the *New York Times* editor, Uscinski and Parent (2014) document this conspiratorial belief in 1958:

American scientists trying to find method for controlling the weather to take over enemy territory (Uscinski & Parent, 2014: 60)

While this is not incontrovertible evidence that the conspiratorial framing of weather control was widespread in the 1950s, letters to the editor are a good indicator of general public sentiment at any given time. The *New York Times* in particular is an established media institution that is useful to gauge national attitudes (Uscinski & Parent, 2014). Notably, the actor in this 1958 conspiracy theory is the generically referenced American scientists, an indication of the anti-elitist anti-intellectualism posited by Hofstadter (1963) and of the increasing distrust of scientists as a nefarious network who were using science to control nature¹⁴ (Reisch, 2012).

Implicit Links to 1950s: Science's Sinister Societal Role

The explicit links between this conspiracy framework and the concrete evidence of 1950s technological capacities that its believers display as proof are well-established in the Reddit discourse. Less obvious throughout the rhetoric is how these arguments are rooted in the anti-elitist anti-intellectualism that spawned from the 1950s popular anxiety in the wake of revolutionary scientific achievements that changed the scientific paradigm (Reisch, 2012). Bauer (1996) notes that anti-intellectualism predates the 1950s: societal skepticism toward the scientific community has ebbed and flowed. Indeed, widespread antagonism of science has seen spikes and

¹⁴ The relationship between science and nature is one that deserves further attention concerning the topics in this paper.

falls; there is also evidence that cycles of rationalism and mysticism go as far back as the roots of Judaism (ibid). Rapid progressions of science and technology tend to incite corresponding public sentiments that reveal a widespread increase in pseudo-science or explicit anti-science.

Commonly known pseudo-scientific phenomena of the 1950s include, but are not limited to: UFOs, pseudo-psychology, and cryptozoology (ibid). This antagonism toward science and the scientific community, however, underwent a fundamental shift in the 1950s with the rise of what Hofstadter called anti-elitist anti-intellectualism, as drastic leaps in science and technological achievements exhibited an unforeseen power to transform nature.

The most significant of these discoveries is the atomic bomb, which has been noted for its contribution to mass unease in the American population at this time. The scientific community experienced a subsequent high and low in public perception as a result. In 1948, for example, J. Robert Oppenheimer, the father of the atomic bomb, was on the cover of *Time* and on the first issue of the journal *Physics Today* (Halberstam, 1993). David Halberstam terms this moment in time Oppenheimer's reaching a "mythic status in popular culture" (ibid, p. 30). In contrast, Joseph and Stewart Alsop detail the paradox of the public's relationship with this community in the 1950s:

The bomb, whose glare illuminated a new world also gave the once-obscure brotherhood of physicists a strange new standing. They acquired something of the position in our society of the Mathematician-Astronomer-Priests of the ancient Mayas who were at once feared and revered as the knowers of the mystery of the seasons, and the helpers of the sun and the stars in their life-giving courses. (Halberstam, 1993: 30-31)

The American people, though grateful for science's role in developing the war-ending atomic bomb, were simultaneously fearful of the obvious and sudden power wielded by this small community. The reality of the total technological revolution taking place set in, and reverence transitioned to fear. If scientists were capable of such powerful destruction, what else could they carry out on an unknowing nation or world of laymen who were not privy to the information or

resources they could use? Indeed, four years after the atomic bomb dropped, Oppenheimer was accused of having ties to communism, and a second time in 1954 (Reisch, 2012). As a result of the latter, the U.S. Atomic Energy Commission banned him from their facilities by revoking his security clearance, and his reputation dwindled as fears of his being a communist gained traction as the American public began to scrutinize the trustworthiness of the seemingly omnipotent scientific community. Today, we see a parallel distrust in military and scientific figures in chemtrail rhetoric:

Sounds crazy, but military tech is always ahead of the game, first CPU was in the Tomcat... I'm sure they're telling the military retards who spray this shit it's for national security or some other bullshit (crestind)

Would it be plausible those responsible for the geo-engineering (sic) also have better knowledge on how to avoid (some of) the affects (sic) of the trails and stay healthy? (ZeerVreemd)

Scientists are amoral smug dickheads. (kekbringsthelight)

In addition to explicitly insulting scientists, these commenters suggest that not only does the possibility of this technology exist, but that military or scientific powers, which are intrinsically linked, are obfuscating the dispersion of chemicals under the guise of national security, and additionally have the power to evade chemtrails' effects.

Reisch's (2012) examination of Thomas Kuhn's *Structure of Scientific Change* and Hofstadter's aforementioned *Paranoid Style of American Politics* contributes a wealth of insight to the relationship between conspiratorial arguments and skepticism of scientists. That Kuhn, a former scientist turned science historian, was conceiving of and publishing about the scientific community in terms equating it to an intellectual cult indicates the unique distrust of scientists that sprouted in the 1950s. Further, Reisch tells us that he criticizes the new scientific paradigm of this time as absolutist and monolithic, even implying that scientists create results that correspond with their preconceived beliefs. Relating the power of science back to brainwashing,

Kuhn suggests that scientists themselves have been victim of the brainwashing, not by a conspiracy of communists, but by the novel scientific process and ideas of his day.

Indeed, the euphemistic indicators of Communism during the 50s further point us to elucidating, tacit links to the chemtrail rhetoric. McCarthyism banked on the unseeable: the invisible forces that had penetrated minds so insidiously even they were unaware they had been sieged. Borne from this conspiratorial model (and essential to its perpetuity) is the relation of Communism with brainwashing, “ubiquitous in American popular and political culture from the onset of the Korean War in 1950” (Reisch, 2012: 327). Reisch provides further examination of the brainwashing allegory: when Americans heard reports of soldiers in Korea defecting and collaborating with Chinese and North Korean captors, the simple explanation was brainwashing, for what reasonable human being would choose communism over freedom? He points to the 1962 film *The Manchurian Candidate* as a powerful popular culture allegory of this mass 1950s brainwashing hysteria. The widespread belief in brainwashing stemmed largely from a former CIA analyst’s revelations that this Korean brainwashing was real: this source gave the claim credence and furthered support for McCarthyism and the brainwashing theory it peddled. When revelations of top-secret CIA mind control experiments later became public in the 70s, this deepened the perception that brainwashing was real all along. Paradoxically, conspiracy theories that revolve around science and technology only validate authority when it supports their argument; in fact, dissenting authority figures bolster these conspiratorial claims. We see this theme woven into the chemtrail conspiracy beliefs. Alluding to these perceived “white knights” of the otherwise sinister scientific community are comments like this one, suggesting that those who defect are punished:

People who go against mainstream, they don't get book deals, tv deals, radio shows etc, it's all shut down for them, because they're not pushing the same ideas/paradigm that the others are, they're

attempting to get people to do something 'they' don't want, think about things and the possibility that we don't know everything we think we know and the absolutes we believe, are not really absolute but just as far as our intelligence, knowledge and grasp can reach. (Glassclose)

This notion takes us back to Kuhn. As a dissenting insider of the scientific community, Kuhn is akin to the fractional percentage of scientists today who deny climate change; he is like Dr. Peter Duesberg (Darsey 2002) whose doubts about AIDS generated and steeped public doubt; he is the translator of the scientific community and a trustworthy voice to laypeople who are susceptible to doubt the absolutism of the scientific community out of misunderstanding, or perhaps of fear for its known and unknown power. As a defector, he represents the aforementioned “white knight” of the science world, who aims to reveal its dubiousness to the lay-public. This mainstream vs. alternative dichotomy is a staple in many conspiracy theories, but specifically manifests in the context of the scientific community within chemtrail discourse:

I believe "scientists" like Bill Nye and Neil DeGrasse are being used by the establishment as pawns to push junk science on us...Bill says Chemtrails are fake and GMO's safe (as does NDT). My friends are eating his Netflix show up. Fuck them. (forefather6667)

They don't give a shit about the science itself. They use it as tool for political mobilization and whoever goes against the tide is easier to shutdown. Any scientist denying geo-engineering thats (sic) happening around the world has vested interests in promoting the "right" science (SocialJusticeVWarrior)

The lab coat is the same as priest's frock. If a person has a PhD we seem to automatically assume they're experts in whatever opinion they express. (IgnatiusTowers)

These comments reflect what Kuhn suggests about the 1950s scientists: they are collectively biased and predisposed to prove an opinion as opposed to a fact; contemporary takes on this add that scientists are an arm of the government to exercise tighter control. We see this further entrenched in the conspiracy arguments here as these individuals tie mainstream science to the alleged global conspiracies.

Conclusions

Modern-day conspiracy theories that deal with scientific or technological matters have fundamental links, both tacitly and overtly, to the conception of scientists as an untrustworthy

collective. That this small, elite population can control nature in the evidentially terrifying ways that the world witnessed in the 1950s spawned a new anti-elitist anti-intellectualism that is still evidenced in chemtrail rhetorical discourse. The additional retroactive revelations of other true conspiracies, which were initially obscured by government forces, bolster this notion of scientists as part of an elaborate scheme that hinges on technology as a great obfuscator.

The increasing capabilities of technology, to which only scientists have the key, are central to the core tenets of conspiracies about health, science, and technology. As modern conspiracy theories around science and technology have become increasingly difficult to rebut, their inherently mysterious and technical natures are perceived by conspiracy believers as proof. As technology progresses and further confounds the lay public, contesting and debunking conspiracy claims like chemtrails will become more difficult as the trust in the scientific community is threatened. With the hypothetical use of geoengineering to combat climate change becoming a closer reality in the near future, the chemtrail conspiracy looks to become increasingly associated with global powers that will use climate change as a guise to spread these supposed chemicals, announced and in plain sight. Moreover, this examination of chemtrails reveals intricate links with other anti-science conspiracy theories like GMOs, vaccines, and climate change, so the implications of this paper may be illuminating to understand and combat these other irrational responses that are similarly anti-science. In better understanding the roots of the chemtrail conspiracy theory as founded in the anti-intellectual sentiments specifically akin to those beginning in the 1950s, strategies to clarify and rebut these theories can be developed.

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