

Prophets, puppets, and pinheads: Contesting the authority of science in the COVID-19 era

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Abstract

This article studies resemblances between academic postmodernism and today's popular contestations of the authority of science by means of a qualitative content analysis of 657 critical online comments on a Belgian newspaper article about the COVID-19 crisis that features a prominent Belgian virologist. The comments portray scientists as (1) *prophets* who pretend their knowledge to be superior to competing understandings of the world; (2) *puppets* who figure in hidden schemes that cannot stand the light of day; and (3) *pinheads* who lack the intellectual competence to give solid scientifically informed advice. While the first two critiques do at first sight resemble academic postmodernism, they are in fact informed by the markedly modern understanding that objective and neutral scientific knowledge is as feasible as it is desirable. What we find, then, are not contestations of the authority of science per se, but indeed of practices deemed deviant aberrations of science.

Keywords

conspiracies, postmodernism, public attitudes, scientific authority, scientism

1. Introduction

Ever since its emergence in the wake of the intellectually tumultuous 1960s, postmodernism has been a voiceful critique of the authority of science from within academia. Its critique of the modern scientific pretension of being able to provide superior, that is, strictly neutral and objective knowledge, makes it a nuisance to all those who put their faith in precisely such a scientific endeavor. The latter, in turn, critique postmodernism for wrongly asserting its own intellectual superiority vis-à-vis both religion and science, the warring twins of the modern order (Gellner, 1992), and condemn it as little more than “higher superstition” that stands in the way of the scientific pursuit (Gross and Levitt, 1994).

The last decades, however, the siege on science also strikes from outside the walls of academia, with nonacademic, lay audiences vocally contesting and denying its authority. While back in the

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1960s and 1970s such critical voices still tended to come from left-leaning progressive students, they have since then increasingly relocated to the political right, resulting in major polarization between liberals and conservatives (Gauchat, 2012). The already burning antisience fire was only fanned after the launch of the Trump presidency in 2016, while more recently, the COVID-19 crisis poured additional oil on it (Hamilton and Safford, 2021; Houtman et al., 2021). Over the past half century, rightist-conservative nonacademics thus appear to have taken over the torch of distrust in science from what Gross and Levitt (1994) call “the postmodern left” in academia.

Indeed, referring to contemporary skeptics of science as “Right-Wing Postmodernists” a critic-like Lee McIntyre (2018: 133) holds academic postmodernism accountable for the surge of public distrust toward science in the West. He suggests that academic postmodernists have “contributed to this situation by retreating within the subtlety of their ideas, then being shocked when they are used for purposes outside what they would approve” (McIntyre, 2018: 126–127). Others similarly regard contemporary contestations of the authority of science as a form of “everyday postmodernism,” pointing out how postmodern understandings of science are today also voiced by the nonacademic public at large (Houtman et al., 2012, 2021). In this article, we therefore study in what respects today’s popular contestations of the authority of science do indeed resemble postmodern critiques, traditionally voiced within academia.

After a discussion of what exactly a postmodern critique of the authority of science entails (Section 2), we discuss the data and methods we use to study popular contestations of the authority of science in Belgium in the midst of the COVID-19 crisis, focusing on the case of virology (Section 3). We then present our findings in Section 4. Finally, we answer in which respects our findings reflect a postmodern dismissal of scientific authority and elaborate on their wider theoretical implications in Section 5.

2. Everyday postmodernism?

Postmodernism is an intellectual movement that entered the scholarly scene in the wake of the 1960s. Ever since, it has been contested within academia because it dismisses the modern scientific pretension of providing a superior type of knowledge about reality, that is, knowledge that is strictly neutral and objective and represents “reality as it really is.” This pretension, postmodernists maintain, is false and misguided, because much like any other type of understanding of the world (e.g. religious, political) scientific knowledge is humanly and socially constructed. Precisely, this allegation is responsible for postmodernism’s controversial status in academia. Critics have dismissed it as wrongly asserting its own superiority over both religion and science, the two great competing narratives of the modern order (Gellner, 1992), and as a type of “higher superstition” (Gross and Levitt, 1994).

Postmodernism’s marked relativism has historical roots in the subjectivism of the romantic movement of eighteenth-century Europe (Gouldner, 1973; Houtman et al., 2021), and in Nietzsche’s perspectivism, which discredits the notion of a universal binding truth in favor of radical skepticism (Nietzsche, 1968: 324–331). It was, however, not until the counterculture of the 1960s that these romantic and Nietzschean appeals acquired broader academic acclaim (Aronowitz, 2019; Gellner, 1992; Gouldner, 1973; Marwick, 1998: 288–318). Among the adherents of this counterculture, which consisted mainly of progressive left-leaning students (e.g. Marwick, 1998; Roszak, 1969), grew a sense that “the lines between science and politics were blurring” (Seidman, 2017: 157–158). Indeed, influenced by neo-Marxist writings such as Horkheimer and Adorno’s (2002 [1944]) *Dialectic of Enlightenment*, those concerned felt that capitalism instrumentalized science and technology to manipulate and exploit the masses, reducing humans to mere numbers and futile cogs in the capitalist machine (Aupers, 2012; Roszak, 1969). Modern ideals of Enlightenment

science as sustaining a march toward freedom and democracy lost much of their appeal and credibility in the process. From the 1980s onward, the neo-Marxist heritage of the Frankfurt School then cross-fertilized with newly emerged French poststructuralism, resulting in the so-called postmodern turn in the humanities and the social sciences. Postmodernism, in summary, entails an intellectual movement that breaks with “the grand narratives of modernity” (Lyotard, 2005 [1979]), not least “the absolute privileging of science as truth on both epistemological and political grounds” (Seidman, 2017: 198).

More specifically, postmodernism dismisses scientific pretensions of delivering superior, strictly neutral and objective knowledge on two different, yet logically related counts. First, postmodernism denies the possibility of a “view from nowhere” or a “God’s eyes view,” and by implication the possibility of such a thing as objective, universally binding truth. This is because from a postmodern point of view scientific studies are inevitably informed by one-sided cultural perspectives, leading to a notion of truth as “elusive, polymorphous, inward, [and] subjective” (Gellner, 1992: 24). Whether one perspective is more valid than another cannot be determined on strictly intellectual grounds, so that no perspective can legitimately claim superior epistemic authority over others. Yet, this is precisely what scientists do: claiming culturally unmediated, authoritative truth, epistemically superior to nonscientific understandings.

A second postmodern claim is closely connected to its denial of the possibility of strictly neutral, objective, and culturally unmediated knowledge. For postmodernism also asserts that the one-sided points of view that are invoked to arrive at truth claims are firmly tied to vested social interests (McIntyre, 2018: 126). Scientific truth claims do as such qualify as assertions of power that create or sustain structures of inequality (Seidman, 1991). Knowledge and power are seen as inextricably linked in a symbiotic relationship, with both imposing themselves upon the other (Foucault, 2020 [1975]: 27). On one hand, knowledge is said to impose itself upon power, discursively producing—or rather reproducing—“identities, [. . .] institutional practices, and [. . .] norms” (Seidman, 1996: 703). Knowledge is as such understood as a cultural source of inequality in the sense that “effects of power,” as Foucault (2020 [1994]: 114) observes, “circulate among scientific statements.” On the other hand, power imposes itself upon science. That is, vested interests define the types of knowledge worth pursuing, in the process endowing the latter with legitimacy. Every legitimate type of knowledge thus marginalizes its nonlegitimate counterparts (Seidman, 1996: 703). Western societies take claims about divine intervention less seriously than scientific explanations, for instance, while some disciplines, institutions, or individual scientists are granted more authority than others. This is precisely why postmodernists aim to “deconstruct” scientific truth claims: by exposing the intellectually arbitrary perspectives that give rise to them as well as the ways in which the former are themselves tied to vested interests.

Renowned postmodern theorists in the social sciences summarize the two interlocking tenets of an impossibility of strictly objective, neutral, and culturally unmediated knowledge and an inevitable intertwinement of knowledge and interest as follows:

Postmodern thought [. . .] is bound to discourse, literally narratives about the world that are admittedly partial. Indeed, one of the crucial features of discourse is the intimate tie between knowledge and interest, the latter being understood as a “standpoint” from which to grasp “reality.” (Aronowitz, 1992: 258)

Once the veil of epistemic privilege is torn away [. . .], science appears as a social force enmeshed in particular cultural and power struggles. The claim to truth, as Foucault has proposed, is inextricably an act of power—a will to form humanity. (Seidman, 1991: 134–135)

It should come as no surprise that the postmodern view that scientific truth claims are inevitably bound to culture and power is fiercely critiqued within academia. Critics accuse it of being

anti-intellectual, promoting relativism, being self-contradictory, lacking meaning, and being overly vague and obscure—among other things (e.g. Gellner, 1992; Gross and Levitt, 1994; Sokal and Bricmont, 1999), with the most vocal critiques stemming from the natural sciences. Mathematician Alan Sokal, “being troubled by an apparent decline in the standards of intellectual rigor in certain precincts of the American academic humanities,” famously managed to publish an article in one of the leading postmodernist journals, in which he states, among other allegedly nonsensical claims, that physical reality is a mere “social and linguistic construct” (Sokal, 1996: 62). Indeed, this so-called “Sokal Affair” has until the present day remained the best-known attack on postmodernism.

So, what about the suggestion that today’s popular contestations of the authority of science entail a sort of “everyday postmodernism”? While some scholars hold academic postmodernism accountable for contemporary popular contestations of the authority of science (e.g. McIntyre, 2018; Wight, 2018), others go less far, yet still point out marked similarities between the two (Houtman et al., 2012, 2021). Even some of those who have themselves contributed much to the popularization of postmodern relativism in academia point out these resemblances. Bruno Latour (2004: 227), the French anthropologist who extensively studied how scientists produce truth claims in their laboratories, is a case in point:

[E]ntire Ph.D. programs are still running to make sure that good American kids are learning the hard way that facts are made up, that there is no such thing as natural, unmediated, unbiased access to truth, [. . .] that we always speak from a particular standpoint, and so on, while dangerous extremists are using the very same argument of social construction to destroy hard-won evidence that could save our lives. Was I wrong to participate in the invention of this field known as science studies? Is it enough to say that we did not really mean what we said? Why does it burn my tongue to say that global warming is a fact whether you like it or not?

Others deny the relationship, claiming that it is “a mistake” (Prado, 2018: 9) to attribute today’s popular contestations of the authority of science to academic postmodernism. Yet, research has demonstrated patterns that may suggest otherwise. One example is the occurrence of skepticism about scientific experts intervening in policymaking among parts of the public (Post et al., 2021). Another is the finding that people are more inclined to follow advice by apparently independent scientists than advice by “scientists and politicians” (Farjam et al., 2021: 10). Research into conspiracy theories similarly documents massive doubts about scientific pretensions of strict objectivity and neutrality (Harambam and Aupers, 2015). There are hence sufficient reasons to systematically study whether, and if so: how, contemporary distrust in science entails a form of “everyday” (Houtman et al., 2012; Houtman et al., 2021) or “Right-Wing” (McIntyre, 2018: 133) postmodernism. In what follows, this is precisely what we set out to do. We first study the different ways in which the authority of science is popularly contested to then compare our findings with its postmodern counterpart.

3. Data and methods

Case selection

The COVID-19 crisis placed scientists all over the world—willing or not—into the spotlights of the public debate.¹ To study popular contestations of the authority of science we therefore conducted a qualitative content analysis of Facebook comments on a Belgian newspaper article about the COVID-19 crisis that features an influential Belgian virologist.² The article was published in *Het Laatste Nieuws* (translated “The Latest News,” further referred to as HLN), “Flanders’ [Dutch

speaking region of Belgium] main news brand in terms of consumption and popularity in print and online” (Hendrickx et al., 2021: 2140). HLN is particularly useful for our study, because compared to more highbrow Belgian newspapers that cater principally to the higher educated, its readership is more or less equally distributed across educational levels (Information Center for Media [CIM], 2020; Picone and Deweppe, 2015), and because contemporary distrust toward science is more typical of the lower than the higher educated (e.g. Achterberg et al., 2017; De Keere, 2010; Gauchat, 2012).

After comparing a series of potentially useful articles in HLN, we selected one that covered a well-known Belgian scientist commenting on the COVID-19 crisis and government measures aimed at curbing it. The prominent Belgian scientist featured in the article is Marc Van Ranst, a virologist with ample experience in pandemic crisis control. During the 2009 influenza pandemic, he was appointed *Interministerial Commissioner*, and in 2019, he gave a Chatham House lecture on crisis communication in the case of a pandemic, which went viral among critics under the false premise that he actually lectured on manipulation of the public.³ Given his reputation as an internationally acclaimed virologist and his national prominence as a public health expert, Van Ranst can be considered the Belgian equivalent of Anthony Fauci in the United States. During the COVID-19 pandemic, he became the principal spokesperson, or even embodiment, of science in Belgium. He received more screentime than any of the other Belgian virologists who made media appearances in 2020 (Walgrave and Kuypers, 2021: 17). Studying public comments on Van Ranst’s commentary rather than on that of one of his international peers—for example, Anthony Fauci (USA), Jaap van Dissel (Netherlands) or Christian Drosten (Germany)—enabled us to fully grasp the contextual and linguistic subtleties that are vital for an in-depth qualitative study like ours. Non-Belgians might know Marc Van Ranst’s name from something other than his academic and professional merits. For in May 2021, he unwillingly rose to worldwide fame after a far-right, extensively trained professional soldier went missing from his compound with stolen heavy weaponry, while he made threats to the Belgian government and Marc Van Ranst⁴—indeed a sinister exemplification of how much science has meanwhile come under siege.

The headline of the selected HLN article read, *Van Ranst on corona mutation: “The virus now enters the body more easily.”*⁵ The article covers an interview with Marc Van Ranst that took place during the evening news of 20 December 2020. The renowned virologist is asked to comment on recent developments concerning the new Sars-Cov-2 mutation which appeared to be more infectious than the original virus. The virologist confirms that the new mutation is indeed more harmful and explains that it is not entirely clear whether or to what extent vaccines provide protection against it. Furthermore, the virologist is asked for his opinion about countries closing their borders, to which he replies that this is a useful, precautionary measure. The article generated a large number of critical comments on Facebook on which we conducted a qualitative content analysis.

Method

On 26 March 2021, we extracted all 2036 Facebook comments on the article into a more convenient PDF format, using the “print webpage as PDF”-function. We thus did not take comments added or deleted after that date into account. Using the QSR software NVivo, we first cleaned the data and composed our final sample, because to address our research question we only needed comments that somehow express a critical attitude toward science. Our aim is after all not to study how widespread public contestations of the authority of science are, but rather what exact form such contestations take and how they compare to their postmodern academic counterpart. This self-imposed limitation helped us escape the well-known problems of an inductive approach, which is strictly speaking not only impossible (one cannot observe “everything” in the data), but also intellectually

meaningless (much of what is in the data is unimportant for the research problem or hypothesis at hand). After going through the data twice, we were left with 657 comments (32%) that did not remain limited to reactions to Marc Van Ranst's claims in the HLN article, but typically went beyond that by criticizing other, previous claims by Van Ranst or other virologists, as well as voicing critiques of the social and political role of virology or science more generally.

Our analysis of these 657 comments then further followed the principles of the Grounded Theory approach (Charmaz, 2014) to inductively arrive at an empirically grounded conceptualization of "popular contestation of the authority of science," understood from the outset as a mere "sensitizing concept" to be empirically substantiated through our content analysis (Beuving and de Vries, 2015: 51). In so doing, we adhered to the practice of constant comparison central to the Grounded Theory approach, that is, we continuously reflected upon the emerged codes and recursively reconsidered them if necessary (Savin-Baden and Major, 2013: 437).

The first step in this analytical process was the phase of open coding (Charmaz, 2014: 109–137), in which we assigned codes to 865 different pieces of texts identified within the 657 comments. To prevent distortion through personal bias, we used codes that were as specific and concrete as possible (e.g. "scientists insist on blind trust"). Yet, a saturation point was reached halfway through the coding process: after we analyzed approximately 300 comments, no new codes emerged. Next was the phase of focused coding (Charmaz, 2014: 138), where we identified the most important concepts (e.g. "absolute authority in matters of truth"), based on a comparison of the various codes obtained. The final step in the data analysis was the phase of axial coding (Charmaz, 2014: 147), where another round of extensive and recursive comparison ultimately yielded three more general categories,⁶ in which scientists are portrayed as, respectively (1) *prophets* who pretend their knowledge to be superior to competing understandings of the world; (2) *puppets* who figure in hidden schemes that cannot stand the light of day; and (3) *pinheads* who lack the intellectual competence to give solid scientifically informed advice (see Table 1). Each of these personas has its own distinctive set of attributed traits, as we will illustrate in the next section.

4. Results

Prophets: "The holy virologists"

Our first general category, *prophets*, consists of critiques of scientists for their alleged self-congratulatory, prophetic pretensions. A first subcategory denounces them for *claiming absolute authority in matters of truth*, a second one for *seeing themselves as superior to others*, and a third and final one for constantly vying for *media attention*.

First and foremost, comments denounce the *absolute authority in matters of truth* virologists allegedly claim. Critics here argue that the authority of virologists does not hold beyond the boundaries of their own scientific discipline, since "virologists do not have any knowledge of economic affairs, [. . .] mental problems, [or] entrepreneurs who are in danger of going bankrupt." Yet, they "share their opinion and decide about everything." Or as the following comment comprehensively phrases it:

Since when are virologists knowledgeable about economics, welfare, and humanities? Since when have virologists been elected by the people to decide for them? Since when do virologists have knowledge of free markets and liberalism? [Since when do they decide] that people should be put on income loss, that countless businesses should go bankrupt, and that countless people should be pushed into poverty and unemployment? And yet, all these virologists are allowed to express their opinions and decide what should be done on those subjects.

Table 1. Coding scheme.

Category: Scientists as	Subcategory: Critique aimed at	Code examples:	Comment example:
Prophets (170 parts of text)	Absolute authority in matters of truth (59)	Negligence of other perspectives; Takes part in policy making; scientist insists on blind trust; . . .	“Virologists have no knowledge of economic affairs. [. . .] Yet, they are allowed to share their opinion and decide about everything.”
	Pretensions of superiority (63)	Feeling superior to others; Ironically idolized; rules don’t apply to them; . . .	“The common man is not allowed anything. And look at their faces! THEY ARE JUST LAUGHING AT US.”
	Media attention (48)	Too many television appearances; Loves the attention; Media-hungry; . . .	“Tomorrow, you’ll give me an update tomorrow, won’t you? It doesn’t matter on which TV or radio station. I’ll be there for you.”
Puppets (385 parts of text)	Purposefully misleading information (157)	Lying about numbers; lying to frighten; lying about the existence of the virus; . . .	“They frighten the people even more, because there is too much vaccine hesitancy.”
	Conspiracies (172)	Something is amiss; Dictatorship; Domination of populace; Mass murder; . . .	“The global genocide must continue; the plan must be followed, and we’re right on schedule.”
	Personal interests (56)	Financial gain; Self-interest; Own political gain	“Properly sponsored by the pharmaceutical industry!”
Pinheads (231 parts of text)	Contradictory advice (90)	Incomplete information; Inconsistencies; No rectifications; . . .	“You’re talking about the same virologists that said mouth masks would not help, right?”
	Mistakes out of ignorance (107)	Incorrect information; Wrong solutions; Proposing better solutions; . . .	“Why call for a vaccine right away? Why don’t they teach the public to boost their immune system by natural means?”
	Cognitive shortcomings (34)	Stupid; Doesn’t know what he is talking about; Even I’m smarter; . . .	“This man is not the sharpest tool in the shed.”
Rest category (79 parts of text)	Rest category (79)	Ridicule; Threat; Call for revolt; . . .	“Your day will come, Van Ranst, you sheep.”

Another commentator observes that Van Ranst “does not work in a hospital” and argues that virologists need to leave medical concerns to those who “studied to be [medical] doctors and work in a hospital.” Others find it even more troublesome and debatable if scientific knowledge about viruses and pandemics is invoked to guide public policy and inform legislation: virologists “should

be concerned with viruses, not with political statements.” Scientists are not “chosen by the people to decide for them,” and should therefore not have influence on public policymaking. The fact that disobedience to said policies is penalized, is perceived as the suppression of dissident voices: “[virologists] impose their will,” a will that afterwards becomes law. The reason these scientist-proposed laws are obeyed, according to one comment, is not because everyday citizens find them legitimate, but because “we cannot afford to pay large fines for this nonsense.” The presumed scientific extension of virological authority beyond virology as a scientific discipline is subsequently even referred to as “a medical tyranny.” Scientists are, in other words, expected to confine themselves to “what their job entails.”

Many commenters believe that scientists *see themselves as superior to others*. They feel belittled by virologists, stating that they “are just laughing at us,” and that “they treated the people like 9-year-olds.” Some highlight the marked power relationship that is involved by pointing out how virologists “are allowed everything,” whereas “the common man is not allowed anything.” Similarly, someone writes that “[t]he emperor has spoken,” critiquing the virologist’s alleged arrogance and pretentious superiority. Next to similar idolizing terms such as “Herr,” “guru,” and “man of the year” people also refer to the virologist in an explicitly canonizing way: “The Holy Virologist,” is said to suffer from “megalomania.”

In the eyes of critics, this also explains scientists’ vying for *media attention*. Critiquing scientists’ craving for media attention and television appearances, commenters point out the irony of Van Ranst’s failure to appear on television “via videocall” in a period when working from home was the general norm. After each new development in the pandemic, one states, the virologist “has found something new to appear on television.” According to another comment he should better “seek [his] attention elsewhere.” Van Ranst’s alleged media-obsession is frequently ironically critiqued, or ridiculed, as this comment exemplifies: “Ouch, we are all going to die, it has happened. I suddenly feel faint just because of this news! You will give me an update tomorrow, won’t you? It doesn’t matter on which TV or radio station.” Likewise, being tired of seeing him “practically every day on TV,” someone asks him, “When do you return to your laboratory?” whereas others write that this “TV-virologist/fortune teller” should “[l]ook for a productive solution” instead of appearing on television, since the pandemic is a “problem that is urgent and should probably be solved in a lab rather than through all kinds of media channels.”

In summary, critics who understand scientists as *prophets* maintain that those concerned illegitimately take center stage as if they have superior authority and a monopoly on absolute, unmediated truth. Particularly, when engaging in policy advice, they are seen as absolutizing the goal of curbing the pandemic, which comes down to overruling alternative perspectives that for instance highlight the harm various COVID-19 measures allegedly may do to the economy or other aspects of wellbeing than health.

Puppets: “It is all premeditated”

In a second general category, critics stage scientists as *puppets*, who figure in hidden schemes to further extra-scientific interests that cannot stand the light of day. Again, this general category consists of three subcategories. The first one critiques scientists for *purposefully providing misleading information*; the second one accuses them of being part of all sorts of *conspiracies*; and the third one suggests that their behavior is motivated by *personal interests*.

A substantial number of comments maintain that virologists *purposefully provide misleading information* to blow the pandemic out of proportion. Those concerned relativize the seriousness of the virus, often by invoking personal experience as evidence. One person, for example, observes that he got infected with the virus, yet merely “had a heavy flu for two days.” Another similarly

recounts, “I am a high-risk person, four-to-five days flu-like, and finished.” Relativizing the seriousness of the virus also informs comments that critique or question the statistics that are used and presented. “The numbers they throw at us,” according to a comment,

[a]re just manipulative. They increase or decrease the scale, which is already a bit more conspicuous in a curve. The periods are shortened, so that you get very large peaks. “There are more infections.” False, more have been discovered, about 15%. But there has also been 20% more testing. There are again so many hospital admissions, but also many discharges. The sum or the difference, that’s what they should be basing their calculations on. [. . .] Ah yes, even I can create a storm of [COVID-19] waves that way.

Critics assert that deaths as well as medical interventions are too liberally registered as being COVID-19-related, even while “there are other complications that people die from, but they don’t examine that.” Families of deceased patients, another comment even asserts, “must sign an agreement, declaring that it is because of COVID-19.” Virologists and other medical or scientific experts are said to exaggerate and manipulate the statistics to incite fear among the public (“fear produces power”) to scare people into getting a vaccine and make the vaccination campaign more successful (“they frighten the people even more, because there is too much vaccine hesitancy”). Claims about the existence of new mutations are similarly questioned, suggesting that virologists “are compelled by the government to report it” and “[execute] what the elite demands.” Scientists are even addressed with “Dear over-subsidized, government-instructed propagandists.” Other comments blame the general public for buying into such forms of data manipulation and statistical distortion, writing that “for a non-existent virus, people seem naïve.” “Let them sleep a little longer,” one commenter writes cynically about people who are less critical, “otherwise they have to throw the vaccines away.” Whereas some of the allegations of scientists spreading disinformation for obscure purposes are relatively mild, others are more disturbing.

Indeed, a decent body of comments accuses virologists of partaking in *conspiracies*. The conflicts of interest and manipulation are oozing out,” one writes. While another insists that “this whole affair [COVID-19 pandemic] has been provoked.” It is even argued that “preparation has been going on for a long time,” which now is “getting clearer.” The public is, indeed, said to be manipulated, “trained to follow orders, and to be subordinate and loyal.” The presumed evil genius behind all this is a power-hungry elite that is allegedly “reshaping society”: “they only want “yes-men” who do not violate any rules.” Allegations of conspiracies take on different forms. One, for example, mentions that “governments are supported by Bill Gates [. . .] and the WHO [World Health Organization], of which he is the boss” and another person writes that “the whole world goes in lockdown on command of the WHO,” and that its “chairman” is a “lobbied pawn of China”—pointing to the alleged involvement of China in the pandemic. Still others take these conspiracies another step further and argue that scientists “are fine-tuning the nanotechnology they are going to put in the vaccines,” while someone else argues that COVID-19 is not even a virus, but “[5G] radiation.” In its most radical form, critics even assert that “vaccines are going to kill us” and that it “is going to be the biggest genocide worldwide.” In short, the “global genocide must continue, the plan must be followed, and we are right on schedule,” according to one comment. It should therefore come as no surprise that comments explicitly referring to scientists as “puppets” or “marionets,” or comments arguing that it is high time for “the show” to come to an end, repeatedly pass the stage.

As to why virologists mislead the public and take part in these conspiracies, some believe it is for *personal interests*. For instance, they are held to be in it for the money: “Imagine him getting paid for his nonsense, then he will be prosperous too,” someone suggests, to which another person replies: “Uh, I’m not sure if you are aware, but he already is.” The virologist with “all his Big

Pharma deals” allegedly “works for two pharmaceutical companies.” “The slightest percentage [of the vaccines],” thus, “will lead to big money.” The virologist “and other lab rats with an opinion” are thus “just puppets of the euros.” Even Van Ranst’s university is mentioned in this financial corruption: “[He] works for the Catholic University of Leuven,” and “if you look at the website of The Bill and Melinda Gates Foundation, you will see that they have received at least 3 million euros from Kill Bill,” someone writes.

In summary, critics who understand scientists as *puppets* maintain that their activities are informed by, and instrumentally used to further, all sorts of shady extra-scientific interests. Besides, more far-fetched conspiracies, particularly the alleged role of science in serving the interests of governmental and corporate elites, are highlighted here. Although this resembles critiques of prophets who act as if “the right policy” can on strictly logical grounds be derived from “the right science,” the puppets discussed here are not denounced for their belief in the superiority of their knowledge, but for their cynical and malevolent scheming.

Pinheads: “Not the sharpest tool in the shed”

The third and final general category of comments critiques scientists for being *pinheads* as they are believed to lack the competence to provide reliable scientific advice. This is first exemplified by comments that allegedly identify *contradictions in scientists’ advice*. Similarly, the second subcategory consists of comments that reprimand scientists, suspecting that they make *mistakes out of ignorance*. Finally, critics consequently *challenge the cognitive capacities* of those who profess science.

“How often did the ‘virologists’ contradict themselves?” someone asks, pointing to perceived *contradictions in scientists’ advice*. “All those experts who think they know so well, [. . .] keep saying different things every day,” writes another person. “The experts,” according to the comments, “constantly give contradictory information,.” They allegedly “were caught in lies and contradictions” from the start of the COVID-19 pandemic, providing “a different story every time.” The comment section covers a plethora of such examples. For instance, comments point to the fact that virologists initially compared the COVID-19 virus with “just a flu,” or suggested that it would “weaken to a common flu,” statements that soon appeared to be too optimistic and had to be adjusted. Another example of highlighted contradictions and inconsistencies concerns the development of vaccines, “of which they said that it traditionally takes ten years on average before a vaccine effectively is launched on the market.” “The COVID-19 vaccine arriving this quickly,” the same comment continues, “is highly exceptional.” Yet another contradiction that is repeatedly mentioned is the initial narrative that “mouth masks [provide] a false sense of safety,” while later on “they were promoted intensively.” These contradictions and inconsistencies are understood as stemming from incompetence, while—as someone notes—they are in practice more typically framed as “evolving [scientific] insights.” Subsequently, it is argued that “nobody can understand it anymore,” since “too much information is counterproductive. Due to recursive contradictory information, critics just “don’t know what to believe anymore.”

Other comments correct virologists on the science of virus and vaccines, believing they make *mistakes “out of ignorance.”* Some cautiously propose that “it is possible that [the COVID-19 virus] has mutated into a milder virus.” Yet, others even seem convinced of this. “Viruses, first lesson,” a comment argues, “a virus needs its host to survive, so it eventually mutates into a more infectious and less lethal form.” But the article mentions “again nothing about lethality,” something virologists “professionally avoid.” They “should look at what the flu does every year.” Indeed, “everything in nature adjusts itself continuously,” therefore “a virus cannot be stopped, not now or ever”—someone writes. The following comment phrases this critique thoroughly:

It's too bad that this "expert" doesn't know that every virus mutates. There are now more than 20 known variants, and one that is more aggressive. Which was to be expected, and there's a good chance of even more aggressive variants in the future. And no vaccine will stop that. Just look at a much simpler flu virus, they haven't even been able to find or market anything effective against that.

Vaccines will thus not provide immunity, since "your body does not tell what the vaccine has to fight against," one commenter writes. Other than just pointing out inconsistencies and correcting alleged misinformation, commenters even propose better strategies themselves. Someone points to errors in the communication about the pandemic, observing that "they talk about waves while they should talk about seasons." Similarly, policy proposals are often critiqued for not being adequate, since "the strategy proves that in reality the wrong choice is made [. . .]: a lockdown does not work against this virus," they should therefore "wipe everything off the table and search for a new strategy." Next to the lockdown, other measures are argued to be inadequate, since "you can't stop the virus with a mouth mask and gloves." "I would consider it more logical," one notes, "to vaccinate the 'healthy' population only within 5 to 10 years, when we are sure not to burden ourselves with harmful side effects that only emerge after years." Still, others argue that the only solution is "herd immunity." We should "learn to live with the virus," and "dying is part of that."

Parts of the public thus *challenge the cognitive capacities* of scientists. "A renowned virologist? I doubt that" someone writes, thereby questioning the scientist's scientific expertise. According to another comment, the only person to blame for the pandemic turmoil is Van Ranst himself, "with [his] incompetent behavior." Others similarly point to the presumed lack of scientific expertise, arguing that the virologists "don't know anything themselves"—they are even said to "know less than a little child." "If I open my book," another argues, "I know just as much as he does." Virologists are explicitly referred to as dumb and are allegedly "getting dumber by the day": "the longer they went to school, the dumber they became." It is believed about Van Ranst that "[t]his man is not the sharpest tool in the shed," as another comment phrases it.

Summing up, those who conceive scientists as *pinheads* critique them for lacking the skills and expertise needed to give adequate scientific advice. In making their case commenters highlight examples of virologists being inconsistent and contradicting themselves. Allegedly faulty information ranges from policy proposals deemed inadequate or plainly wrong to misguided information about viruses, their contagiousness, and the efficacy of vaccines. Of course, in dealing with what they see as misinformation from the side of scientific experts, many commenters suggest allegedly better and more effective solutions themselves. Although *pinheads*, much like *puppets*, provide incorrect information, they are not taken to malevolently and purposefully mislead the public (*disinformation*), but to do so unconsciously, unwillingly, and unknowingly (*misinformation*). Unlike *puppets*, *pinheaded* scientists are believed to be incompetent rather than malicious.

5. Discussion

Now do the three types of popular contestations of the authority of science resemble postmodern critiques, and if so: in what respects? At first sight, our first two categories do indeed coincide with postmodern critiques of the authority of science. For *prophets* are accused of abusing the cloak of science to marginalize alternative perspectives and understandings of the pandemic—perspectives and understandings with profoundly different policy implications. *Puppets*, for their part, are accused of legitimizing and furthering various types of non-scientific interests that serve corporate and political elites, and as such of being far from neutral. Both critiques thus contest the authority of science on the same grounds as academic postmodernism: scientific knowledge is held to be perspectival and inextricably linked to power.

Yet, despite these marked similarities, our evidence boasts profoundly modernist understandings of science that contrast with academic postmodernism. For whereas the latter holds as a matter of principle that scientific research *cannot* be strictly neutral or objective, and cannot be free from extra-academic interests either, here prophets and puppets alike are chastised as bad deviations from proper scientific conduct, from “science as it should be.” Prophets are incited to stay away from media attention and to abstain from marginalizing alternative, equally legitimate understandings of both the COVID-19 pandemic and the legitimate measures of curbing it. They are encouraged to play more modest and nonpolitical roles instead: to simply stick to academic research in their laboratories. The role of the puppets’ involvement in legitimizing and furthering non-scientific interests is similarly seen as a sorry aberration rather than as inevitable, as academic postmodernists would have it. Indeed, both critiques are informed by profoundly modern understandings of science as a strictly neutral, objective and non-partisan endeavor—precisely the understanding of science that postmodernists unmask as a modern myth, impossible to attain in the real world.

Critiques of scientists as pinheads even more explicitly boast an optimistic modern understanding of science, even to such an extent that not only postmodernists, but most scientists generally will dismiss the implied notion of scientific knowledge as conclusive and no longer open to doubt and critique as naïve, misguided and intellectually illiterate. For while those who critique scientists as pinheads take errors, uncertainty, and disagreement as signifying scientific incompetence, the latter do in fact constitute the indispensable fuel for critical debate that paves the only feasible path to better knowledge, albeit without ever arriving at the point where it can no longer be doubted. Rather than signifying scientific incompetence, then, contradiction and controversy are part and parcel of the modern scientific pursuit.

At a closer look, unlike postmodernism, all three types of critique thus voice a markedly modern faith in the ability of science to produce reliable knowledge. These contestations of the authority of science are as such not directed against science per se, but against overly pretentious, corrupt, and incompetent scientists. *Prophets* are accused of wrongfully claiming superior, objective knowledge, and are incited to retreat to their laboratories to engage in scientific research instead of appearing on television and intervening in policymaking beyond their legitimate expertise. *Puppets*, likewise, are chastised for siding with corporate or political projects that corrupt the scientific process. A firm belief in the possibility of conclusive, rock-hard scientific knowledge even more explicitly pervades the critiques of allegedly *pinheaded* scientists. All three types of critique are as such informed by modern understandings of objective and neutral scientific knowledge as both feasible and desirable (Wight, 2018: 20), and they contest the authority of scientists who deviate from this modern ideal. What we find are at a closer look not so much contestations of science (see also Harambam et al., 2022), but of practices seen as falsely wearing the cloak of science.

Our findings thus substantiate the growing body of literature that identifies today’s contestations of the authority of science as first of all a crisis of institutional trust (see also Goldenberg, 2021). The conspiracy theorists studied by Harambam and Aupers (2015), for instance, similarly critique abuse of science by vested interests instead of the inability of science per se to produce accurate knowledge: “Science, we may say, is at once sacralized for its intentions but demonized for its manifestations” (Harambam and Aupers, 2015: 477). Simons (2021) identifies comparable concerns among so-called DIY-Biologists, for example, those who privately conduct biological research outside universities and large research institutes. They accuse the latter of forsaking the scientific endeavor due to their preoccupation with institutional interests and side issues. Indeed, Achterberg et al. (2017: 717) demonstrate that among the public at large distrust of scientific institutions does not at all coincide with distrust in science per se. The low educated even combine trust in science with distrust of scientific institutions. Much like our own findings suggest, then,

critiques of science are at a closer look critiques of actually existing scientific practices that are paradoxically informed by trust in the feasibility and possibility of science.

This study also has potential limitations. First, having limited itself to manifestations of public contestations of the authority of science, our study cannot conclude that postmodernism is completely innocent of having contributed to today's antiscience climate in the West. Its relativism might, for instance, have promoted an openness toward unscientific perspectives in media and popular culture, which has then furthered an erosion of the public authority of science—this, we believe, is a worthwhile direction for future research efforts. Second, concerns may be raised about deriving theoretical generalizations from one Belgian case. Yet, we have no reason to believe that any other (Western) case would have led to markedly different results, given that Marc Van Ranst's status in Belgium is akin to those of Anthony Fauci (United States), Jaap van Dissel (Netherlands) or Christian Drosten (Germany) in their respective countries. While Van Ranst may be more outspoken compared to his international colleagues, perhaps eliciting more extreme responses, one can also argue that precisely this makes him an ideal case for a qualitative study like this. For this is likely to yield data that are richer in contrast and that as such make it easier to construct the distinct ideal-typical categories we were after.⁷

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Notes

1. Case selection, coding, and analysis were primarily carried out by the first author as part of a master's thesis; this happened in close dialogue with the second author. When there was doubt about codes and categories, discussions took place to assure methodological and analytical rigor. Presented data are translated from Dutch to English. Full data (pdf in Dutch) are available upon request.
2. This needs some clarification since Belgium has a rather peculiar structure. Without delving into details, Belgium has two major regions of which one (Wallonia) is French speaking and the other (Flanders) is Dutch speaking. Both parts have their own media outlets in the language of their respective populations. For our case, we thus focused on Flanders, the Dutch speaking part.
3. <https://www.brusselstimes.com/news/belgium-all-news/155486/how-to-sell-an-epidemic-a-marc-van-ranst-conspiracy-theory-explained-chatham-house-pandemic-vlaams-belang-h1n1>
4. <https://www.brusselstimes.com/belgium-all-news/170779/far-right-terrorist-manhunt-marc-van-ranst-ludivine-dedonder-alexander-de-croo-the-hunt-for-jurgen-conings-a-timeline>
5. <https://www.hln.be/vtm-nieuws/van-ranst-over-coronamutatie-het-virus-geraakt-nu-makkelijker-binnen~a5dead84/>
6. We were left with a rest category of 79 pieces of text that contained threats aimed at Marc Van Ranst or the government (not incorporated in the "Results" section, but see Table 1).
7. Note, for instance, how Max Weber, in his comparative studies of the world religions, focuses for similar reasons on the beliefs and actions of "religious virtuosos" rather than lay believers.

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