Anthroposophical Climate Science Denial

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Abstract
Climate science denial has a perhaps surprisingly strong standing in anthroposophy. Anthroposophical deniers of climate science usually do not contest the existence of global warming, but they ascribe it to “cosmic” processes that are largely described in astrological terms. Thoroughly refuted claims that ongoing global warming depends on variations in solar activity have been adopted by anthroposophists. This article proposes three major explanations for the persistence of climate science denial in the anthroposophical movement: Anthroposophists constantly look for guidance on scientific issues in the writings of their founder Rudolf Steiner (1861–1925), who made claims far off from the mainstream science of his time. They consider the material world to be constantly influenced by “spiritual” factors, including astrological constellations and a host of supernatural beings. Finally, they cherish ideas on a predetermined, largely cyclic, cosmic plan, of which humanity is a part.

Keywords
Anthroposophy, climate science denial, esoterism, pseudoscience, Rudolf Steiner

Introduction
Anthroposophy is an esoteric movement that was founded by Rudolf Steiner (1861–1925), originally as a splinter group from the Theosophical Society. The group is commonly perceived as “green” and “ecological,” not least due to its biodynamical agriculture that has developed into a variant of organic farming (Vogt 2007). One could therefore expect anthroposophy to easily embrace both the conclusions and the policy implications of climate science. But to the contrary, climate science denialism has a strong standing in anthroposophy. It is the purpose of this contribution to highlight this fairly unknown aspect of anthroposophy and to explain how it relates to the basic spiritual beliefs of the movement.
Science and spirituality in anthroposophy

Anthroposophy has characteristics usually associated with religions, not least a belief in a large number of spiritual beings (Toncheva 2015, 73–81, 134–135). However, its adherents emphatically reject that it is a religion, claiming instead that it is a spiritual science, Geisteswissenschaft (Zander 2007, 1:867). Many religions have resources to defuse apparent incompatibilities with science, not least by referring to a separate spiritual reality that cannot be counted on to manifest itself in ways that are accessible to scientific testing or validation. To the contrary, anthroposophy claims to “speak about that which is inaccessible to the senses in the same way as natural science speaks about that which is accessible to them” (Steiner 1909, 13:36). Since the spiritual reality is assumed to have a massive influence on the physical world, this means that anthroposophical spiritual science has much to say about issues that are also investigated by conventional science.

Rudolf Steiner, the founder of anthroposophy, claimed to have found a systematic method, largely based on meditation, for obtaining spiritual truths. The method is based on passive observation “Schau”) of what comes to mind during certain mental exercises (Zander 2007, 2:1469). The clairvoyant has to continuously restrain any inner tendency to analyze or criticize what he observes. “Through such efforts of reason he merely diverts himself from the right path.” Instead, he should “look out on the world with a keen power of observation, and give up himself to his feelings” (Steiner 1904, 10:44). Or, in other words: “We must say to ourselves: our thinking ceases, and our head becomes the scene of the influence of the higher hierarchies” (Steiner 1915, 161:166). In this way, the inner experience will be gradually filled “with a content that enters the soul from the outside in a way similar to how the contents of sensory perception enters from the outside physical world through the senses” (Steiner 1911b, 35:125). Due to the “powers” of the “etheric body,” these experiences are transformed to “objective observation” (126). The results from spiritual science that Steiner himself obtained in this way are considered by anthroposophists to be known with a very high degree of certainty.

Truths of spiritual science are true through themselves. There is no need to prove them through other circumstances, with external methods. (Steiner 1924, 327:157)

Steiner claimed that this road to spiritual knowledge is available to in principle all humans. “Every human possesses dormant capabilities with which he can achieve knowledge on higher worlds” (Steiner 1904, 10:14). In practice, however, no anthroposophist has developed, or—in particular—been recognized by other anthroposophists for developing anything like Steiner’s ability to obtain spiritual knowledge (Hammer 2004, 340; Zander 2007, 678; Baumann-Bay and Baumann-Bay 2000, 30–31, 87–88). This may have something to do with the conflictual culture in the anthroposophical movement (Zander 2019, 133; McKanan 2018, 33–34). Anthroposophists tend to be skeptical towards even fairly modest claims by others to have obtained spiritual knowledge by direct application of Steiner’s methods. For instance, the agricultural calendar is not liked by all anthroposophists, since it goes beyond what Steiner said (Baumann-Bay and Baumann-Bay 2000, 191). Therefore, anthroposophy, as practiced today, is almost completely based on interpretations of Steiner’s books and (stenographically recorded) lectures, rather than on use by others of the method for obtaining spiritual knowledge that he presented.

Instead of claiming high clairvoyant abilities, many anthroposophists focus on “Goethean science” (Goetheanische Wissenschaft), which involves empirical observations that differ from those of modern mainstream science (McKanan 2018, 179–181). This is well in line with Steiner’s description of Goethe’s contributions to natural science, which did not consist in “following the
processes that are accessible to the senses all the way to their smallest component” but in “a higher form of sensing,” which would reveal “the essence of life” (Steiner 1897, 6:116). Goethean science has been described as “a method that seeks to achieve objectivity not by bracketing out subjective consciousness but by disciplining our consciousness so that it is capable of observing things in themselves” (McKanan 2018, 180).

Steiner repeatedly claimed that there were no conflicts between natural science and his own spiritual science. “The natural science of our time does not contradict spiritual science, instead it is itself elementary spiritual science” (Steiner 1903, 34:70; cf. Zander 2007, 1:869). Seeming discrepancies were ascribed to insufficiencies of the empirical sciences. Additional research would “in not too distant time” bring conventional science “into full harmony with that which spiritual research must establish for certain areas from its supersensory sources” (Steiner 1908, 11:240). He was often critical of conventional or, as he said, “materialist” science. In practice, spiritual science took precedence when the two approaches ran into conflict (Hammer 2004, 225–226; Zander 2007, 1:678, 1:957, 2:1471).

Steiner presented results from spiritual science in a wide range of areas of empirical knowledge. As noted by Hammer, this means that anthroposophy harbors extensive empirical claims on “the most diverse subjects: matters normally defined as belonging to the domain of science, yet made immune to scientific critique because of Steiner’s radical dichotomy—agronomy, chemistry, pharmacology, physiology, anatomy, developmental psychology, astronomy, physics etc.” (Hammer 2004, 227). In most if not all of these areas, there are prominent divergencies between his spiritual science and modern natural science. For examples of the difficulties involved in combining Steiner’s spiritual science with modern natural science, see Hansson (1991). These difficulties have a deep influence on anthroposophy both in theory and practice. Anthroposophy differs from most other esoterical movements in being not only a set of doctrines but also a set of practices, the most important of which are anthroposophical medicine, biodynamical farming, and Waldorf schools (also called Steiner schools) (Zander 2019). All of these practices have their theoretical basis in Steiner’s revelations from spiritual science, often combined with Goethean science (which appears to be particularly important in biodynamical farming).

The reaction of anthroposophists to the introduction of genetic modification is instructive. Due to Steiner’s negative views of mainstream genetics, and the strong focus of Goethean science on visible phenomena, the initial reaction was extremely negative. Some anthroposophists even denied the existence of DNA, claiming that it was “a concept created by Ahrimanic beings who try to prevent us from having a true connection with nature” (McKanan 2018, 190). Today, the existence of DNA does not seem to be in question. However, the anthroposophical movement, seemingly unanimously, rejects the use of modern biotechnology and depicts it as dangerous, in spite of an overwhelming scientific consensus that it is a useful and safe method to improve crops, not least in response to the challenges to agriculture of climate change (Aslam et al. 2020).

It should, however, be recognized that the anthroposophical practices are often both promoted and practiced in a pragmatic (but not internally uncontroversial) way in which the esoteric background is not very prominent (Breda 2019, 215–216). As noted by Zander, there is a form of “secularization” of anthroposophy, represented by farmers who follow the rules of biodynamic farming but do not assimilate the underlying esoteric beliefs (Zander 2019, 143).1 Similarly, many Waldorf schools have recruited teachers who do not identify as anthroposophists or endorse the spiritual ideas of the movement (Zander 2019, 263). In the anthroposophical movement itself, represented by the national branches of the General Anthroposophical Society, adherence to Steiner’s teachings is much stronger.
Some anthroposophical deniers of climate science

The best way to get an overview of anthroposophical climate science denial is to study the writings of some of its more prominent proponents.

Werner Schmötzer

Werner Schmötzer (born in 1946) has a long background in the anthroposophical movement. He has held a position in Weleda AG, the major producer of anthroposophical drugs, and he was chair of an organization for anthroposophical healers (Arbeitsgemeinschaft Anthroposophischer Heilpraktiker e.V.) from its foundation in 1992 to 2005. In 2012 he published two books on climate change (Schmötzer 2012a; 2012b). For the first of these books, he was awarded a special prize from a German association of anthroposophical healers. In 2013 he became member of the working group “astronomy and spiritual science” of the mathematical-astronomical section of Goetheanum, the international headquarters of the Anthroposophical Society.2

According to Schmötzer, “the anthroposophy of Rudolf Steiner provides information that we are at the beginning of a cosmically determined hot phase, which begins around the year 2000 and will last 500 to 600 years.” Notably, the word “cosmic” indicates a causal connection with heavenly bodies, rather than with human activities (Schmötzer 2012a, 4). Schmötzer’s main sources are lectures that Rudolf Steiner held about a century ago, in which he said that the earth is subject to a “rhythmic movement” between ice ages and warmer periods. According to Steiner, this movement is connected with the cycle of about 25,700 years that it takes for the ascending node of the sun to pass through the twelve signs of the Zodiac (Steiner 1921, 125). In addition to Steiner, Schmötzer also refers to Guenther Wachsmuth (1893–1963), who was appointed by Steiner to lead the natural science division at the Goetheanum, and authorized to continue Steiner’s work on these issues (Schmötzer 2012b, 251). Wachsmuth wrote in 1950:

For the large time phases of the temperature rhythm it is however the whole epoch, in which the spring equinox passes through the Pisces, which is axially positioned towards the Gemini, that should be considered to be the climax and heat maximum. During this epoch, which will end about 2500 AD, we will be in the highest zone of the temperature curve, a process that will until then increase and accumulate more and more. Thus, on a large scale we can count on a predominance of heat processes for about 500 to 600 years… The whole hotzone of the earth seems to expand more and more to the north in our time, a process that, judging by the aspects mentioned above, should halt after about 500 years…

It follows from the cosmically oriented aspects that we have recounted here that after the current hot period has abated in about 500 years, that is, after the end of the phase in which the spring equinox stands in the Pisces, and the axial position of the Gemini is readjusted, a general decline in the heat will follow in the coming epochs, and finally in the 11th to 12th millennium pass over to a growing cold period, whose climax will be in the phase when the spring equinox is in the Virgo, with the axial position in the Sagittarius. (Wachsmuth 1950, 112–113; Schmötzer 2012a, 9–10)

Needless to say, these are just astrological speculations, and there is no evidence for the claims by Steiner, Wachsmuth, and Schmötzer that the earth’s climate is connected with the twelve Zodiac signs of astrology. However, Schmötzer treats these alleged connections as proven facts, and consequently he ascribes global warming to these predetermined “cosmic” influences. In contrast, he describes the IPCC’s calculations of future temperatures in different scenarios as “estimates” that “have no basis in evidence” (Schmötzer 2012b, 318). He sometimes leaves it open whether CO₂
emissions give rise to further warming in addition to the “cosmic” effects (50). On other occasions he says that human influence on climate change should be minimized, whereas nothing can be done about the alleged “cosmic” warming (7).

Michael Kalisch

Michael Kalisch (born in 1957) is one of the most prolific writers on climate issues in anthroposophical journals, not least in Das Goetheanum, the most important anthroposophical periodical. It appears weekly since its foundation by Rudolf Steiner in 1921, and it is the official organ of the Anthroposophical Society. In his many writings on the climate, Kalisch has repeatedly denied the existence of human-made global warming. In a main article in Das Goetheanum in 2004 he denied that there is a scientific consensus on anthropogenic climate change. “Surprisingly, there is no such consensus, and an unambiguous judgment is therefore not possible” (Kalisch 2004). In an article in the same journal in the next year he blamed the widespread belief in the greenhouse effect on “a growing collective sense of guilt among us civilized humans towards nature” (Kalisch 2005a). Of the IPCC’s computer models he said in Das Goetheanum in 2008 that “they only ‘prove’ their own assumptions, with which they were constructed” (Kalisch 2008a). In an article in 2012 in another anthroposophical journal he called these models “computer games” and claimed that those who believed in them are “victims of an Ahrimanic deception” (Kalisch 2012, 49). (The excessively materialistic Ahriman is one of the two “devils” of anthroposophy.) In Erziehungskunst, the official organ of the association of Steiner schools (Waldorf schools) in Germany, he wrote in 2009 that climate change caused by human activities “cannot be shown,” and that it “should as soon as possible be given up and banished from our schools” (Kalisch 2009b). In 2014 he reconfirmed this in Das Goetheanum: “The greenhouse effect of carbon dioxide and methane has not been shown” (Kalisch 2014). In Gegenwart in 2018, he described the greenhouse effect as “a thought model that has until now not been empirically proved” (Kalisch 2018, 37), and in 2019 he wrote in the same journal that it is “a tragic delusion of our age” (Kalisch 2019).

Although Kalisch does not recognize human influence on the climate, he believes that it is changing due to non-human causes. He refers to “hidden rhythms,” that is, historical cycles in which cosmic processes, human history, and changes in the earthly climate are all included (Kalisch 2013). Like Schmötzer, he believes these cycles to be closely connected with “Rudolf Steiner’s references to the twelve signs of the Zodiac in the time span of the Platonic year [25,700 years]” (Kalisch 2008b). He wrote in Das Goetheanum that “the history of the earth verifies once and for all that CO₂ is not the primary driver of the climate.” Instead, “the conductor sits in the cosmos—the active sun” (Kalisch 2008a). In an article in the same journal in 2014, he claimed to have found support in Steiner’s texts for attributing climate change to variations in solar activity, whereas he used as an argument against the reality of the greenhouse effect that Steiner did not mention it:

A far as I know, Steiner nowhere mentions the “greenhouse effect”; instead, when asked about changes in the weather at the time, he once speaks about “electromagnetic flows in the universe”, which were connected with sunspots. (Kalisch 2014)

In an article in Das Goetheanum in 2008, Kalisch referred to a paper from 2003 by two climate science deniers who claimed that most of the global warming could be attributed to changes in solar activity (Shaviv and Veizer 2003). The conclusions of that paper had been shown to be wrong already in 2004 (Rahmstorf et al. 2004). Nevertheless, Kalisch claimed that its authors had shown “that the climate on Earth is primarily regulated by cosmic forces, by the sun and the heaven of the
fixed stars, whereas earthly entities like greenhouse gases (of which water vapour is the most important) have the role of posterior amplifiers” (Kalisch 2008b). He has also promoted similar ideas put forward by the three Danes Eigil Friis-Christensen, Knud Lassen and Henrik Svensmark (Kalisch 2005b; Kalisch 2009a). These claims were convincingly rejected already in the early 1990s (Lacis and Carlson 1992; Kelly and Wigley 1992; Schlesinger and Ramankutty 1992). Since then, additional evidence has further confirmed that variations of solar activity cannot account for the currently ongoing changes in the earth’s climate (Sloan and Wolfendale 2013). Kalisch does not deny that CO₂ levels are rising. However, contrary to overwhelming scientific evidence, he maintains that a warmer climate gives rise to higher CO₂ levels in the atmosphere, rather than the other way around Kalisch 2009a; Kalisch 2010).

His denial of anthropogenic climate change has clear implications for policy. He says that instead of reducing greenhouse gas emissions, we should rely on the self-healing capacity of the earth system:

Unless we rely on the self-regulating power of the processes that take place between sea, atmosphere, and land–in the abstract called the “climate system”–we risk going into hystericis. (Kalisch 2009a, 14)

However, even if this alleged self-regulation would leave us with a hotter climate, he does not see that as a disadvantage. He argues that in particular in Europe, higher temperatures will save more people from freezing to death than those who will die from heat:

It is only in Africa that the balance looks negative. What could Kyoto achieve? In order to save 4000 people in the developing countries from heat, more than 80,000 deaths from freezing in the first world would have to be accepted, and 1 trillion dollars have to be spent. (Kalisch 2009a)

Unsurprisingly, he concludes that “it is not worth all these billions that have to be paid for ‘Kyoto.’ Climate change is determined by the cosmos, not by CO₂-producing industries and internal combustion engines” (Kalisch 2009b).

When Al Gore received the Nobel peace prize in 2007, Kalisch wrote a critical comment in Das Goetheanum, claiming that it had been shown convincingly that “all the statements that Al Gore makes or implies are one-sided, exaggerated, misleading or simply false” (Kalisch 2007). Five years later he attacked Angela Merkel for her support of action against climate change:

A single doctrine, the idea of a climate catastrophy for which humans can be blamed due to the use of fossil fuels, which is still fundamental for civilization, constitutes a potential tool for a globally centralized regulation of the economy… There are many who see a resurrection of the communist planned economy in the spirit of climate policies, and perhaps they have reasons for doing so. It should be no surprise that a federal chancellor who grew up in such a regime wanted to be a spokesperson for climate protection and ambitiously wanted to make her country a role model for everyone. (Kalisch 2012, 50)

**Dennis Klocek**

Dennis Klocek is an American anthroposophist who claims to “really see some remarkable connections between the planetary motions and the development of unusual weather phenomena” (Rist 2005, 5). These “connections” are alleged patterns on astrological charts. Although he has written a whole book on the matter, the patterns he refers to are so vaguely described that they do not
give rise to any specific, testable claims. Neither is his method described in terms of rules that others can apply to predict the weather. He describes his method as “akin to divining” (Klocek 2011, xviii). Essentially, he seems to spend many hours staring at diagrams showing projections of the moon and the planets on the Zodiac, trying to obtain inner visions of the future weather. “I must tune in my inner eye spiritually to the laws governing the earth” (Rist 2005, 6). This might possibly be described as a form of anthroposophical Goethean science. He produces weather forecasts for the coming year, to be published in an almanac. He also reports that he has customers among the traders at the Chicago Mercantile Exchange (6).

In his book, he dismisses the computer models used in climate science, claiming that “the chaos of the manifest phenomenon (climate) is too complex for computational mathematics to model it” (Klocek 2011, 264). Instead, he claims that “planetary movements can provide support for long-range forecasting in a time when climate issues are becoming ever more important” (xvi). He claims to have revived old, largely forgotten but still valid knowledge from the past:

Weather magicians, rainmakers and others understood that an intimate link exists between the human elements and soul life and the elemental beings that animate natural phenomena and the motion and rhythms of the planets. Those deviners knew that the world is a whole and that earthly phenomena are populated by beings, who, like humans, originate in the starry realms and retain links to the planetary spheres by virtue of having physical bodies. Such understanding of the relationship between the Earth’s soul and forces and human souls and forces were lost in the harsh light of empirical science…

We find a mirror of these divine rhythms in the great mystery language formed by the movements of planets, which manifest as climate, the soul of the Earth. (Klocek 2011, xviii-xix.)

The “elemental beings” that he refers to are spiritual beings like gnomes, sylphs, nymphs, etc., which are described as mythical entities in non-anthroposophical literature, but are taken in anthroposophy to exist and to have important roles in the development of natural events. Klocek maintains that this, as he calls it, “cosmological perspective” is needed to “resolve the climate crisis,” but he does not specify what he means with the climate crisis or what actions should be taken against it (Klocek 2011, 255).

**Wolf-Dieter Storl**

Wolf-Dieter Storl (born in 1942) is a prolific writer who has published a large number of books promoting anthroposophical and esoteric ideas on healing and on the natural environment. His 2019 book on forests is an example of this; for instance, he expresses his belief in “forest spirits,” beings that do not have a material body, but “still an invisible energy body and also a soul body.” He also claims that there are subterranean spiritual beings, “the gnomes of the earth,” which gardeners need to have a good relationship with (Storl 2019, 230, 234–235). In the same book he claims, just like Kalisch, that the increasing levels of CO₂ in the atmosphere are a consequence of a warmer climate, rather than a causal factor contributing to it. In addition, he maintains that increased CO₂ levels are desirable, since they will make plants grow better. Already now, he says, trees in Germany grow faster “because of the nitrate in the air and a somewhat higher supply of CO₂” (334). He claims that 500–600 ppm CO₂ is needed for “optimal growth” (57). (The CO₂ level was about 280 ppm just before the industrial revolution and 415 ppm in 2019.) In his view, a “climate optimum” for plants would require temperatures at least 2.5°C higher than today (84).
His argument about the beneficial effects on plants of increased atmospheric CO₂ is misleading since it does not take into account the many negative effects of climate change on plants (Sneed 2018). The increase in temperature to at least 2.5°C hotter than today that he claims to be optimal would lead to temperatures about 3.5°C higher than in pre-industrial times. This can be compared to the aim of the Paris agreement, which is to keep the increase from pre-industrial levels of the global average temperature well below 2°C and to pursue efforts to limit it to 1.5°C.

Cornelis Boogerd

In 2004, Cornelis Boogerd published an article on chemtrails and climate change in Das Goetheanum. (According to the chemtrail conspiracy theory, long-lasting condensation trails behind airplanes are “chemtrails” containing substances that are sprayed into the air for undisclosed reasons.) Boogerd proposed that the Pentagon uses “chemtrails” to combat climate change. The article is illustrated with a picture of condensation trails, with the caption: “Feared manipulation of the weather or climate due to so-called chemtrails – stopping global warming” (Boogerd 2004). This would be dangerous, says the author, since it would disturb the various spiritual creatures that are involved in the weather:

According to Rudolf Steiner there are uncountable weather beings, from the highest hierarchies to the smallest elementals. – A “controlled” possession of the weather, which will then be misused for purposes of power politics, would strongly restrict the “work” of the “spirits of orbital periods” and thereby bring the weather under increasingly stronger influence by the adversary powers, who are naturally also active there. (Boogard 2004)

The “adversary powers” are the evil spiritual beings according to anthroposophical teachings.

Ravagli

Lorenzo Ravagli (born in 1957) is a highly active anthroposophical writer and editor. Since 2005 he is one of the (currently four) editors of the Erziehungskunst, the official organ of the German association of Steiner schools. He is known for his staunch defense of Rudolf Steiner’s racist writings, which he reinterprets as humanistic, and for his cooperation with a leading member of the Nazi organization Nationaldemokratische Partei Deutschlands on a book project, which he deserted in 2007, just before the book was going to be presented to the public (Christ and Prohl 2007). In a blog on climate policy, he criticized what he called “tellurics,” that is, people like IPCC scientists and climate activists who ascribe climate change to human activities.

Concerning the anti-CO₂ movement, it is in my opinion based on a specific form of fear of life: since the CO₂ that has been produced by humans, as they believe, poisons the earth or transforms it into a hell, that production has to be stopped. But then they withdraw the foundations of animal and human life on Earth, since without CO₂ there can be no photosynthesis and therefore no plant life and no oxygen. The final consequence of eliminating the CO₂ would be total death. (Ravagli 2019)

Instead, he praised the “cosmics,” who differ from the “tellurics” in that they “have not forgotten that the Earth has a complex relationship with the cosmos and can only be understood from this relationship.” The “cosmics” are convinced that the earth is now in “a natural hot phase” that started around the year 1800, and that the “general warming trend of the 20th century” is part of “a natural
Some additional examples

In this subsection, I will briefly discuss some additional recent examples of anthroposophical climate science denial.

In June 2019, the anthroposophical newsletter *Ein Nachrichtenblatt* contained a comment on Fridays for Future, written by Heidrun Christner and Christel Traut. They denied the scientific consensus on anthropogenic climate change and claimed that there is “a considerable number of scientists who assign no harmful role to the chemically neutral and unreactive carbon dioxide, but who are barely mentioned by the mainstream press” (Christner and Traut 2019a). In support of this they referred to a lecture by Rudolf Steiner in which he claimed that the exhalation of carbon dioxide leads to “an emission of aether” in the human body, thereby facilitating the reception of “cosmic impulses” (Steiner 1923, 230:165–166). They also recommended the Youtube lectures on the climate by the anthroposophical climate science denialist Axel Burkart.

A couple of months later, a somewhat extended version of this article appeared in the anthroposophical journal *Der Europäer*, which is published in Basel, Switzerland (Christner and Traut 2019b). The same issue also contained an article by Gerald Brei, in which he described the scientific consensus on climate change as a “climate religion” and “a gigantic climate swindle” (Brei, 2019, 13). He discussed spiritual aspects of the climate under the heading “Preparations of Ahriman’s earthly incarnation”:

> Ahriman has made good preparations for his earthly incarnation in the beginning of the third millennium. Rudolf Steiner has pointed out that this includes a mechanical-mathematical view of the universe without any spiritual aspects and a belief in statistics and numbers (today’s computer models). The theory of anthropogenic climate change rests on these two pillars and should make things particularly easy for Ahriman. (Brei 2019, 18)

He also pointed out that “the ‘Fridays for Future’ movement uses the sixth letter of the alphabet three times (666),” thus, indicating a connection with the Beast in the Book of Revelation (Brei 2019, 18).

In 2019 the Scottish anthroposophical journal *New View* published an article by Richard Phethean in which he denied the scientific consensus on anthropogenic climate change, arguing that instead, “the sun is the main driver of the climate.” He also told readers that there is no risk of the climate getting too hot, since the earth is a “living organism” which has “powerful regulatory, homeostatic controls—in other words, negative feedback mechanisms in living organisms generally predominate, and thus help to minimise any changes before they get too extreme” (Phethean 2019, 41). A year later, the same journal published an article by Peter Taylor in which he said that the curve of global warming had “flattened out after 2001,” a claim that blatantly contradicts the empirical evidence (IPCC 2021, section TS.1.4). He also said that “‘warming’ is not the issue” since it is beneficial. Instead, he claimed that “it is cooling that is dangerous because it is accompanied by mega-drought” (Taylor 2020, 59, 67).

Gerold Aregger, editor of the Swiss anthroposophical magazine *Gegenwart*, has published a large number of articles that deny climate science. In 2019 he recommended a so-called school material on climate change “with controversial views on the theme,” published by the right-wing extremist journal *Weltwoche* (Aregger 2019). The material he recommended is a compilation of
texts that describe the scientific consensus as an extreme view and argue in various ways against the reduction of greenhouse gas emissions.

**A partial shift in viewpoints**

Anthroposophy is not a monolith, but to the contrary a diverse and highly conflict-ridden movement (Zander 2007, 1:242–252; Staudenmaier 2014, 100–145, 179–213). In parallel with the publications reported above, quite a few anthroposophists have gone into print, affirming the reality of anthropogenic climate change. In 2003, *Das Goetheanum* published an article by Frank Bohner on emissions trading, in which the negative effects of CO₂ emissions on the climate were not questioned (Bohner 2003). In early 2007, the same journal published an article by Wolfgang Held on the climatic effects of ecological agriculture, in which anthropogenic climate change was taken for granted, and an article by Axel Mannigel that fully accepted the conclusions of the recent IPCC report (Held 2007; Mannigel 2007). In the same year they published a letter from a reader who criticized a leading article by Kalisch for creating the impression “that it expresses an opinion by the editors and the Anthroposophical Society, which seems to be far away from what is known today about the causes of climate change” (Simon 2007). Similarly, in 2010, *Erziehungskunst* published a sharp reply to Kalisch in which his denial of ongoing anthropogenic climate change was described as “irresponsible” (Kümmell and Schad 2010). More recently, the anthroposophical journal *info3* published a thematic issue on the climate crisis (April 2019), in which the scientific consensus and the need for immediate action were fully accepted. This journal is generally considered to represent undogmatic views within anthroposophy.

In the 2010s, *Das Goetheanum* shifted towards acceptance of anthropogenic climate change. After publishing an article by Michael Kalisch against climate science in 2014 (Kalisch 2014), they do not seem to have published anything more by him on this topic. In the last few years, the journal has not questioned anthropogenic climate change, but to the contrary expressed positive views on movements such as Fridays for Future that rely on climate science. However, as can be seen from many of the publications referred to above, this shift has not taken place in all anthroposophical outlets. It should also be noted that acceptance of the reality of anthropogenic climate change does not necessarily imply full acceptance of climate science. Anthroposophical beliefs on the climate that run into conflict with science can be found also in publications that do not question the effects of human activities on climate change. One recent example of this is an article in *Das Goetheanum* in 2020 by Meinhard Simon, in which he claims that the use of biodynamical preparations in agriculture contributes to “strengthening the self-healing forces of the Earth against climate change” (Simon 2020). Theses preparations are based on Steiner’s development of alchemical and homeopathic ideas. From the viewpoint of mainstream science there is no reason why they should have any positive effects on the soil (Chalker-Scott 2013). According to one comparative study, the only significant difference between biodynamical agriculture and non-biodynamical organic agriculture in terms of their effects on the climate seems to be that the former involves rounds with the tractor on the fields in order to spread these preparations (Turinek et al. 2010).

Claims that are problematic from a scientific point of view can even be found in articles by Hans-Ulrich Schmutz, one of the anthroposophists who have done most to promote acceptance of the IPCC’s conclusions and the reality of anthropogenic climate change in the anthroposophical movement (Schmutz et al. 2010; Jüngel 2014; Schmutz 2014; Schmutz 2019). He has tried to establish connections between legitimate science and Steiner’s contention that we now live a “fifth post-Atlantean cultural epoch,” in which the “purely intellectualistic, dead thoughts” of humans will destroy the atmosphere (Schmutz 2019, 8). Similarly, he tries to relate climate change to “the
meaning of the rhythmic processes on Earth, in the connection between Earth and cosmos and in the meaning of the speed of processes, which is critical for life” (9). This refers to spurious anthroposophical “rhythms” that have no empirical base or scientific credibility.

Much more remarkable deviations from science can be found in an article by Andreas Neider in Das Goetheanum (Neider 2019). Neider recognizes the reality of anthropogenic climate change and tries to find ways in which anthroposophists can be helpful in reducing greenhouse gas emissions. He claims to have found a solution in a lecture by Rudolf Steiner from 1906. In that lecture, Steiner claimed that humans can reduce the amount of CO₂ in their exhaled air:

Through rhythmization of the breathing process and through the inner work of the soul the breath becomes cleaner; what the human exhales will then contain less carbonic acid [carbon dioxide]. (Steiner 1906, 147)

According to Steiner, Indian yogis withdraw to caves where they use as little oxygen as possible. “They can do so,” said Steiner, “since their breath is so clean due to the work of their souls, that they can live for a long time without supply of external air.” Since the “continued supply of fresh air” had a negative influence on the occult development, Steiner recommended students of occultism to learn “to control their breathing process” (Steiner 1906, 147). This contradicts basic and well-founded biological knowledge; there is no reason to believe that yogis or meditators can live without oxygen for a long time. But Neider takes these statements by Steiner as revelations of truth:

Further information from Steiner indicates that the composition of the breathed air changes in meditation, so that the meditator keeps the carbon that is otherwise exhaled with the oxygen. This makes his breath similar to that of plants. Thereby, the breathed air is relieved of the deadly carbon and in a way purified, whereas our normal breath has to be purified by the plant world. A meditation by which this phenomenon takes place, would then be a contribution to climate protection. (Neider 2019, 11)

He presents this approach as a way to reduce CO₂ emissions:

Both an intensification of our perception and a meditative life can, as Steiner indicated, improve our highly personal CO₂ budget… Then the problems of CO₂ and its reduction seem to depend mostly on whether or not we understand man as a spiritual being. (13)

The effects of meditation on the composition of exhaled air is of course an empirical issue. The claim that the gas exchange of meditators becomes similar to that of plants has no empirical support. According to the available evidence, meditation can give rise to a relatively small decrease in exhaled CO₂, but not more than what can be explained by muscle relaxation (Fenwick et al. 1977). The difference in exhaled CO₂ between meditation and just sitting still is small in comparison to that between sitting still and hard bodily work or exercise.

**Why so much climate denialism in anthroposophy?**

This investigation started out with the observation that given the “green” image of the anthroposophical movement, one could have expected the movement to willingly adopt the scientific insights on anthropogenic climate change and the political goals to reduce greenhouse emissions. But as we have seen, this was not the case. For long, the official organ of the Anthroposophical Society, Das Goetheanum, promoted denialist views on climate change, claiming that global
warming is a “cosmic” process caused by changes in solar activity or in the astrological constellations of the planets. Still in 2007, when the IPCC and Al Gore shared the Nobel peace prize for their work against climate change, Das Goetheanum responded with a diatribe against Al Gore, claiming essentially that everything he said about climate change was wrong (Kalisch 2007).4

The journal has now accepted the reality of anthropogenic climate change, but it continues to promote claims that go contrary to science, such as Andreas Neider’s bizarre ideas on meditation as a means to reduce CO₂ emissions. Outright denialist views on climate science continue to be expressed in other anthroposophical outlets. As far as I can see, the reasons for the movement’s difficulties with climate science can be found in three central features of its belief system.

1. Dependence on Steiner. Although anthroposophy does not see itself as a religion, its founder Rudolf Steiner has a standing in the movement that is comparable to that of founders in many religious movements and sects. He is believed to have had a unique understanding of both material and spiritual matters. However, as we saw above, Steiner’s approach to scientific issues was fundamentally different from the scientific consensus (both then and now). Nevertheless, anthroposophists still look eagerly for scientific insights in the many volumes comprising his writings and lectures. This has led to significant tensions between the anthroposophical discourse and that of mainstream science, also in many other areas than climate science. For instance, in the years 2002–2005, Das Goetheanum published four positive articles on the claims by the anthroposophist Michael Werner that he no longer needed to eat. He was allegedly able to live without any physical nutrition at all (Stöckli 2002; Stokar 2002; M.S. 2005; Schmitt-Dossou 2005). This led to two mildly critical letters from readers (Fischer 2005; Bockemühl 2005). However, neither of them offered any criticism based on natural science, such as a basic understanding of human physiology and biochemistry. Instead, they found Werner’s claims difficult to believe for two reasons that are both related to Rudolf Steiner. First, if it was possible to live without nutrition, then Steiner would have known it, and then he would have mentioned it, which he did not. And second, if it was possible for a human to live without eating, then Steiner would surely have done so, but he ate:

Should then Rudolf Steiner have known nothing about this possibility of living on Earth without ingesting physical nutrition? Why did he not make use of it for himself? (Fischer 2005)

Rudolf Steiner died in 1925, and his standpoints were often not in line with the science of his own time. Therefore, a search in Steiner’s texts for answers to today’s scientific questions tends to result in inferior science, as exemplified in the writings on climate change by Schmötzer, Kalisch, Neider, and others.

2. The spiritual worldview of anthroposophy. Anthroposophists usually deny emphatically that anthroposophy is a religion, but topics that are normally considered to be religious are central in their teachings. They believe in the existence of a large number of spiritual beings, including the demons and elemental beings mentioned above, but also a large number of spirits, angels, and archangels, many of which are claimed to be connected for instance with specific planets, Zodiac signs, or natural phenomena. Anthroposophy describes itself as a science (“spiritual science,” “Geisteswissenschaft”), that explains and explores the many ways in which these spiritual beings are involved in processes that conventional (“materialist”) science describes and explains without reference to supernatural beings. One example of this is the above-mentioned claim that so-called chemtrails would do damage to the spiritual beings in the air that are involved in climatic and weather-related processes. Another example is an article in Das Goetheanum about the construction of a new railway tunnel in the Alps. The author was worried about how the gnomes living inside the mountains would react to the tunnel. The existence of such entities was taken for granted, and
Rudolf Steiner was quoted as an authoritative source for the claim that gnomes are much inconvenienced by light from the full moon (Bockemühl 2007).

This spiritual worldview differs from the approach of the modern environmental movement, which relies heavily on natural science. Modern environmentalists would worry about the effects on the groundwater of a new tunnel, rather than on the reaction of gnomes exposed to moonlight when the moon is full. This difference between anthroposophy and environmentalism was clearly recognized by Andreas Neider in his 2019 article, although he expressed it in other terms:

Ecocentrism sees no spiritually developing I in the human being, and it wishes to arouse consciousness of the connections between all living beings and of their mutual dependence in their coming to be and passing away. But it has no answer to the question what is the meaning of human existence on Earth and why man at all arose in evolution. The meaning of the whole remains in the dark. (Neider 2019, 12)

Notably, in anthroposophical terminology, “all living beings” includes both biological and spiritual beings, and the “meaning of the whole” refers to spiritual meaning rather than the understanding of ecological systems as wholes. Neider also accuses “ecocentrists,” that is, non-anthroposophical environmentalists, of “a form of rejection of human existence on Earth, which can only be retracted by forcibly socializing the people, as communism has done and still partly does” (12).

The conflicts between mainstream science and anthroposophy’s spiritual worldview has to be understood in terms of the specific nature of anthroposophical spirituality. It includes (1) belief in a significant, continuously ongoing influence of spiritual beings and processes on the phenomena studied by mainstream science, and (2) claims that Steiner’s “spiritual science” contains reliable information about these influences and therefore also about issues investigated by mainstream science. As we have seen, this combination has given rise to a hotbed of claims and proclamations about the climate that run contrary to the consensus of climate science. In comparison, many revelation-based religions pay much less attention to science than what anthroposophy does. This can make conflicts that they have with science much less conspicuous.

3. Belief in a cosmic plan. Many anthroposophists harbor a strong belief in a largely cyclic, cosmic plan and meaning, covering the past, present, and future. They have ample support for this in the writings of Rudolf Steiner, who connected alleged phases in human history with the “rhythms” of astrological periods. Past and future human cultures are said to coincide with phases in the precession of the equinoxes, which is why each cultural epoch lasts about 2160 years. For instance, the current “Germanic-Anglosaxon” cultural epoch is said to have started in 1413 AD and to end in 3573 AD, to be followed by a Slavic cultural epoch (3573–5733 AD) and an American cultural epoch (5733–7893 AD). Anthroposophists who put much emphasis on this cosmic plan will find it much easier to believe that climate change is due to periodic variations in solar activity than to attribute it to disruptive human activities that have no spiritual or “rhythmic” meaning. (This can be different for anthroposophists who put more weight on Steiner’s pronouncement about human freedom.)

To conclude: Global climate change does not fit into the anthroposophical worldview. There are also many other worldviews into which it did not fit, but many of them (including many religious worldviews) have found it much easier to accommodate and assimilate the incontrovertible scientific information about anthropogenic climate change. At least three factors seem to have made this accommodation particularly difficult for anthroposophy: Its veneration of Rudolf Steiner and his claims to have found eternal truths about almost everything, its spiritual worldview that mixes up spiritual and material issues in ways that frequently lead to standpoints that are incompatible with mainstream science, and its belief in a cosmic plan for humanity. Due to the strong standing of
anthroposophy in several Germanic-speaking countries in Europe, and its many political connections, its reluctance towards scientific information is no trivial matter.

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**Notes**

1. Contrary to what is often claimed, biodynamics was not originally based on ecological ideas. Steiner’s holism concerning agriculture was a spiritual, not an ecological holism. After World War II, leaders of the biodynamical movement, in particular Nicolaus Remer (1906–2001) adopted the requirements of ecological agriculture, and made biodynamics an addition to ecological agriculture. They met with considerable resistance from biodynamical farmers, in particular Hellmut Finsterlin (1916–1989), who saw the change as a turn away from the true spiritual ideas of biodynamics. From 1975 to 1991 this group published a journal of their own, *Erde und Kosmos*. However, Remer’s approach substantially increased the market for biodynamical products, and it now completely dominates the biodynamical movement (Vogt 2007, 23). The following quote from Steiner illustrates the difference between his way of thinking and common ecological views: “However strange this sounds today, it has to be pronounced again and again. We must understand the development process, and thereby humans will learn to assess our culture in a correct way. In this way we will learn that it is necessary to destroy the earth, otherwise the spirit will not be free. But we will also learn to value the positive: the inflow of spiritual powers into our earthly existence” (Steiner 1911a, 130: 95–96).

2. http://www.werner-schmoetzer.de/vita. Last accessed 19 January 2021.

3. https://anthrowiki.at/, entry “Ravagli”. Last accessed 2021-09-15. https://www.erziehungskunst.de/impressum. Last accessed 2021-09-15.

4. The adoption of climate science denial, with its extensive conspiratorial claims about the scientific community, can be seen as an example of “conspirituality;” the confluence of conspiracy theory with spiritual beliefs, as proposed by Ward and Voas (2011) However, as noted by Asprem and Dyrendal, knowledge claims that contradict mainstream science are usually already connected with conspiracy thinking “as a standard secondary elaboration when faced with lack of acceptance or outright opposition from the ‘center’ of orthodoxy (already by definition viewed as oppressive)” (Asprem and Dyrendal 2015, 372). Such a secondary elaboration seems to be present in anthroposophical rejections of mainstream science, not only in the area of climate change.

5. See the summary in https://anthrowiki.at/Kulturepochen.

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