



# Restoring Eden in the Amish Anthropocene

NICOLE WELK-JOERGER

*Department of History and Sociology of Science, University of Pennsylvania, USA*

*Abstract* Since Eugene Stoermer and Paul Crutzen popularized the concept the “Anthropocene” in 2000, scholars from many disciplines have taken up and adapted the term to better account for multiple worldviews and environmentalist strategies. However, such attempts have not solved the problems that motivated the creation of the analytic in the first place: convincing lay individuals to actively respond to anthropogenic environmental change. Climate change denial persists, even within the rural and agricultural communities most affected by these environmental changes. These same communities do not always welcome regulatory and technological interventions aiming to limit environmental impact, and climate change, environmentalism, and the Anthropocene are often perceived as distant and empty intellectualisms.

Through an ethnographic account about an uncanny technology, this article explores a conceptual meeting ground between sacred and secular worldviews in efforts that address the Anthropocene. In 2013 an unlikely agricultural group—the Amish—adopted an electromagnetic water device known as the Talya Water System. Studying the use of this water system, this article explores how this conservative Christian community incorporated different worldviews and stresses the importance of taking sacred timelines seriously when considering the Anthropocene. In highlighting an “Amish Anthropocene” located within a fundamentalist Christian timeline, I argue that the Amish embrace of the Talya Water System was achieved through its alignment with their religious worldviews. I propose this alignment as one strategy that may be adopted to make environmental change more meaningful across disparate communities.

*Keywords* Amish, Anthropocene, religion, science, technology, water

## Introduction

“Help me out, here.” The feed salesman instructed me to hold a small plastic bag up to the faucet as he turned on the water. I had never seen water samples taken in a plastic bag before. I always assumed glass or plastic cups would be used to collect liquids for testing. As the water flowed awkwardly into the thin sleeve I found myself constantly adjusting my hands, careful not to exert too much pressure, which would make the water spill out and into the drain. The bag was ready-made with a twist tie, which

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we secured after folding the excess plastic on top. It was yet another introduction to agricultural specimen collecting.

I was intrigued by the amount of “science” I found on these excursions to Amish dairy farms. I had assumed, incorrectly, that the community was rigid when it came to most “worldly” interactions, particularly scientific ones. Perhaps I was the one who had been rigid in my intellectual framing when first introduced to the community. I needed to think less with rigid glass jars and more with bouncy, unpredictable plastic bags like the one I was holding.

“What now?” I asked.

“He’s not in the barn, so we’ll send this out for testing and I’ll call him later.” The salesman, Gene, was referring to the Amish farmer, Amos, we were to visit that day.<sup>1</sup> Earlier, Amos had called Gene on the phone to tell him he would be busy in the fields and unable to speak with him in person. He also told Gene he was concerned with his milk production numbers and wanted his water tested. We pulled the sample from the milk house faucet. I would not realize how complex this interaction was until I was introduced to the Talya Water System.

During my time riding with the feed company to farms in central Pennsylvania, I only helped collect water samples three times. For several reasons, testing hay or silage was more common than testing water. Feeds were subject to frequent rotations and required regular testing. Every time farmers opened their silos or bags to retrieve feed that had not been fed to their animals before, a test needed to be conducted to ensure its safety and nutritional value. I regularly watched salesmen bring results to their feed customers only to tell them that they were giving their animals “crap feed” or “feed that would kill them.” This was always a risk with feeding fermented grains, particularly when a farmer had little experience processing and preparing them.

Water was obviously different. Many farmers used private wells to access their water, but sometimes what the cows were drinking was different from what their humans consumed. Well location, runoff, piping, and, perhaps most important, access to filtration systems affected the quality of the water on a given farm. If the water was polluted, the cows had ways of showing it. Loose manure, irregular eating, kicking, and low milk production were just some of the signals to a farmer that something was wrong. Questionable water quality was not always the first suspect in the search for causes, but in the process of deduction it became important to ask what was in the water. Sometimes, the focus on water would take the form of scientific testing. But other times, religious interpretations of water quality required different methods of intervention. That summer, I found these latter methods affected decisions to test the water on some Amish farms.

This article is a written reenactment of my careful grasp on that water testing bag I was holding in the field. As Amish scholars have continued to show over the years, it is

1. All names included in this narrative are pseudonyms to protect the identity of my informants. This is a standard protocol aligned with an IRB that I submitted with Brandeis University in 2013, protocol #13090.

dangerous to overgeneralize about a community that seems homogenous in both practice and belief.<sup>2</sup> The Amish community, however, relies on such presumed homogeneity as a means to represent their spiritual separation from the “world” and recognize their shared-belief kin networks. But the multiple directions water can go—both physically and symbolically—complicate not only the internal workings of this community but also our assumptions about what it means for humans to have a part in altering our nonhuman environment.

In my discussion of water testing and its meaning in relation to an unusual technology, I address current theoretical provocations of the “Anthropocene.” The Anthropocene as geological era, introduced by Eugene Stoermer and Paul Crutzen in 2000, has been co-opted by humanities scholars, some using the term to think through and execute efforts in environmental activism.<sup>3</sup> However, it is also well documented that bombarding communities with scientific information does not change attitudes toward climate change, particularly in parts of rural America populated by white evangelical Protestants.<sup>4</sup> Through fieldwork observations I made with the Amish community in 2013, I want to introduce a particular fundamentalist Christian interpretation of human-induced environmental change—what I have dubbed, for the sake of simplicity, the “Amish Anthropocene.” Although Christian understandings of environmental changes caused by humans predate the term *Anthropocene*,<sup>5</sup> the idea that technological solutions can exist to restore such changes has historic and symbolic significance for the Amish community, providing a moment to reflect on current Anthropocene discourse. It calls into question how Amish interpret their agency and moral responsibility for current environmental problems. It also questions the current secular scientific and philosophical definitions academics have fixed to this new geological age, and the interventions that may (or should) be attached to it.<sup>6</sup>

I propose that the “Amish Anthropocene” provides an opportunity to reflect further on our academic concerns regarding commensuration in the wake of pluriversal interpretations of ecological changes in the age of the Anthropocene.<sup>7</sup> Theoretical

2. Kraybill, Johnson-Weiner, and Nolt, *Amish*, 137. See also Nolt and Meyers, *Plain Diversity*.

3. Crutzen and Stoermer, “‘Anthropocene.’” More recent examples in the humanities include Hamilton, Bonneuil, and Gemenne, *Anthropocene and the Global Environmental Crisis*, and Lorimer and Driessen, “Wild Experiments at the Oostvaardersplassen.”

4. A 2015 Pew Report suggests that white evangelical Protestants are the religious group least likely to believe that humans have contributed to climate change. See Funk and Alper, “Religion and Views on Climate and Energy Issues.” Other studies suggest American evangelicals actively promote distrust in man-made climate change. See Ronan, “Religion and Environment.”

5. See Barnett, “Theology of Climate Change.”

6. Among other critiques of the Anthropocene concept and its work, including Crist, “On the Poverty of Our Nomenclature.”

7. This is with particular reference to the Symposium on the Conciliation of Worldviews. Perl makes a distinction between commensurability (plausible comparability) and commensuration (how comparability happens) that I attempt to interrogate in this article. See Perl, “Talking Peace with Gods,” 426. For political commensuration, see De La Cadena, “Indigenous Cosmopolitics in the Andes,” 361.

interventions adding to and altering the meaning of the term can better account for the multiple historical processes that created ecological crises (e.g., Capitalocene) and the many relationships across humans and other species affected by these exploits (e.g., Chthulucene).<sup>8</sup> Overall, scholars invest considerable effort in creating and manipulating a concept that helps us think about our responsibility to the Earth in the wake of change, disaster, and extinction. However, these concepts do not necessarily translate well on the ground, particularly as other worldviews slip away or resist these intellectualisms.

Reflecting on these intellectual conversations, I am preoccupied by those discussions concerned with the commensuration of sacred and secular understandings of the world. Bruno Latour has warned that fundamentalism—whether it be naturalism or a religious viewpoint—prevents disparate social groups from actively constructing a “common world” through which to coalesce these multiple understandings.<sup>9</sup> Yet, using the Amish Anthropocene I describe below, I take seriously a fundamentalist Christian ecological timeline to think through how commensuration is achieved between secular and sacred worldviews. The embrace of a device like the Talya Water System demonstrates a sense of techno-optimism within a spiritual Judeo-Christian timeline. Though considered a “quack” technology, even within parts of the Amish community, this device exemplifies the merging of multiple worldviews, from creationist science to theological clairvoyance. The device challenges the commonly perceived boundaries around Amish communities and provides insight into how commensuration happens between religious and scientific spheres. Borrowing Projit Mukharji’s “braided knowledges” framework, which considers how technological objects become meeting sites for different ways of knowing, I propose that commensuration happens through the *braiding* of sacred and secular knowledges.<sup>10</sup>

### Driving to the Amish

More than three hundred thousand Amish live in the United States, making up a significant portion of its rural agricultural communities.<sup>11</sup> They operate an estimated 10 percent of the dairy farms left in America.<sup>12</sup> The Amish are historically related to a number of other Anabaptist communities that could be considered “fundamentalist Christian,” including Old Order Mennonites, Hutterites, and Brethren. These relations increase the significance of the Amish community as an actor in current climate change debates in

8. See Moore, “Name the System!”

9. Latour, “Whose Cosmos, Which Cosmopolitics?,” 460.

10. Though “braided knowledges” or “braided sciences” is applied to colonial Indian cases for Mukharji, it is helpful for this Amish case considering how other ways of knowing may be implicated in Amish-adopted technologies like the Talya Water System. Mukharji’s “braided sciences” also suggests how different cosmologies can be braided together—not just actions and actors weaving or knotting together as described in Donna Haraway’s work. See Mukharji, *Doctoring Traditions*; Haraway, *Staying with the Trouble*.

11. “Amish Population Profile, 2017.” The community has grown significantly since my fieldwork in 2013. See Donnermeyer, Anderson, and Cooksey, “Amish Population.”

12. Cross, “Restructuring America’s Dairy Farms,” 7.

the rural United States. At the same time, many Amish actively avoid worldly politics, from presidential elections to these popular debates.<sup>13</sup> Nonetheless, their prominent place in the agricultural ecology and economy in some parts of the country pulls the community into the media spotlight.<sup>14</sup>

To some extent, calling the Amish *fundamentalist* may rightly account for their extreme religious views, and perhaps even extreme political ones, but Christian Smith's term *biblicism* is more useful for understanding the Amish and related worldviews I describe below.<sup>15</sup> Smith defines biblicism as an assemblage of assumptions about the purpose and function of the Bible, particularly within evangelical Protestantism. This includes taking the Bible as a literal source for understanding nonhuman nature.<sup>16</sup> Biblicism considers, for example, the different uses of the Bible to interpret or to reject the claims of secular science, as reflected in Old Earth and Young Earth creationist theories.<sup>17</sup> Smith's definition is helpful because it emphasizes literal readings of an old and important book. It also considers how these readings become differently interpreted and addressed across communities, which Smith refers to as *interpretive pluralism*. Biblicism does not presuppose American "republicanism," for example, highlighting the importance of breaking away from the often-presumed links between conservative American politics and biblicist religions when considering the diverse ways people address the environment.

Amish life is organized around a very specific biblicist interpretation of passages in the Bible that refer to "worldliness," specifically the call in Romans 12:2 to "not conform to the pattern of this world." The Ordnung (the rules or "order" of Amish living) helps define the boundary between Amish life and worldly life, but this boundary varies between different settlements. The boundary also shifts in various regulatory and regional circumstances that force some Amish to reevaluate the community's rules, including those that apply to technological adoption.<sup>18</sup> The "world" and "worldliness" often represent "expressions of modernity" and can be interpreted as technological objects (cars, television, cellphones, computers) or practices (voting, public education, government subsidies).<sup>19</sup> As sociologist Donald Kraybill has suggested, "If social separation is indeed

13. There is quite a debate within the community as to how involved the Amish should be in state politics. See Kraybill, *Amish and the State*, 35.

14. See, e.g., Bhanoo, "Amish Farming Draws Rare Government Scrutiny"; "Amish and Mennonite Farmers Are Polluting Lancaster County."

15. Smith, *Bible Made Impossible*.

16. Smith, *Bible Made Impossible*, 161.

17. Old Earth creationism falls more in line with mainstream scientific thought—promoting the notion that the Earth was created by God but reconciling the seven-day timeline in the scope of billions of years. Young Earth creationism promotes a literal interpretation of the Bible and the notion that the Earth is only thousands of years in age. See Schroeder, *Science of God* (Old Earth view); Ham, *Lie: Evolution* (Young Earth view); and Trolinger and Trolinger, *Righting America at the Creation Museum* (addressing both views).

18. Wetmore, "Amish Technology," 17.

19. Kraybill, *Riddle of Amish Culture*, 26.

a by-product of technological progress, the Amish believe they can only preserve their community by separating from the Great Separator, modernity itself.”<sup>20</sup>

For the Amish, the “world” is a different conceptual arena from the “Earth.” While the world may refer to specific modern sociocultural practices, the Earth is “universal,” material, and encompasses the ecological conditions of nature. In the Amish worldview, based on their biblical interpretations, there is no doubt that God created the Earth a mere thousands of years ago (in accordance with the Young Earth theory) or that His purposes are played out on it.<sup>21</sup> However, interpreting these purposes using the Bible in the context of everyday agricultural challenges is a difficult task. Using scripture, the Amish recognize that the Earth is to be both actively managed and protected by humans on behalf of God.<sup>22</sup> However, I found that the extent of this management—where human responsibility ends, and God’s will begins—was sometimes questioned during my fieldwork. In these instances, I understood that the Earth was just as contestable a category as the world for the Amish. Is the Earth temporary or infinite? Are the changes that happen on the Earth forces from God or from human actions? Can humans improve the conditions of the Earth, or is this the prerogative of God alone? I felt the adoption of the Talya Water System provoked these questions and blurred what some may think are very clear boundaries for the Amish.

To reach the Amish community, I worked through a mediating commercial force in my ethnographic research. I was driven to and from farms to watch how, specifically, Old Order Amish dairy farmers accepted or resisted management advice from a non-Amish (or “English,” as the Amish say) feed company (fig. 1).<sup>23</sup> Over a four-month period, I rode with three different salesmen who represented the dairy management “team” of a small feed company in central Pennsylvania. We visited five to ten dairy farms daily, and in total I visited over eighty different Old Order Amish farms across Pennsylvania, Maryland, and Delaware.

It is important to note that most of my informants, Amish and English alike, were white male Christians. The English salesmen frequently identified their denominations as important markers of identity, and they spent much of the time describing the similarities and differences between their religious beliefs and those of their customers. One salesman was a Mennonite preacher; the others were affiliated with Baptist, Brethren, and Methodist churches. It deserves mentioning that these men also leaned conservative on most political issues. I had many lively conversations with one salesman who listened to Rush Limbaugh’s radio show between our trips to the farms.<sup>24</sup>

20. Kraybill, *Riddle of Amish Culture*, 46.

21. Stevick, *Growing Up Amish*, 72.

22. Hostetler, *Amish Society*, 114.

23. I will refer to all non-Amish people and groups as “English” for the remainder of this article.

24. Rush Limbaugh is a popular conservative commentator with a well-known radio show in the United States. He was an influential voice in the resurgence of Republican conservatism after the 2008 presidential election of Barack Obama. See Chafets, *Rush Limbaugh*.



*Figure 1.* A view of Pennsylvania farmland from the inside of a feed company work van. Photograph by author.

I also attended workshops hosted by the feed company as well as Family Days on the Farm, an Amish-organized fair that hosts lectures and workshops focused on organic farming. The Amish-hosted fairs both paralleled and diverged from the language of the company-sponsored workshops. Religion and science were rhetorically entangled in both educational events, and Amish understandings of human intervention into nonhuman worlds were predicated on a balance between the two systems of thought.

### **The Water Machine**

Every morning before our ride-alongs, the feed company salesmen came together and described challenges potentially affecting their customers that week. These challenges included everything from toxic silage to rumors spread during church meetings about a certain kind of farm practice, a particular type of feed, or the feed company itself. My field notes were filled with discussions sitting somewhere between sales strategy and damage control. As the president of the company explained to me, they did not *only* sell feed; advice “came with the package.” But the company was not the only source of advice available to farmers. Any kind of outside advice that could damage a farmer’s production levels either inadvertently or directly risked the relationship the company



Figure 2. A Talya Water System installed in an Amish barn. Photograph by author.

had built with its customers.<sup>25</sup> Outside advice could complicate the interactions between farmers and their cattle in ways that affected the feed company's business. For the company to successfully provide the most useful milk production guidance, it needed to understand what the farmer was feeding, how he was milking, and the entire package of decisions he was making regarding his cattle in the barn.

In my last two weeks of study with the feed company, a new challenge emerged on the advising front: the Talya Water System (fig. 2).<sup>26</sup> At that time, the feed company only

25. Interview by the author, feed mill office, Pennsylvania, August 8, 2013.

26. Website screenshots with additional images of the Talya System from between 2010 and 2017 are available on the Internet Archive. See [web.archive.org/web/20131206180907/http://talyawater.com/testimonials.html](http://web.archive.org/web/20131206180907/http://talyawater.com/testimonials.html). Some live references to the water and system can be found at "Talya Water—Dew from Heaven," [healthybottledwater.blogspot.com/](http://healthybottledwater.blogspot.com/) (accessed June 29, 2017).

knew a few things about this device. First, it was advertised and sold by an Amish man to fellow Amish farmers. Second, it was a device that operated either off a battery or an AC adapter, which made it desirable to Amish farmers unwilling to adopt more “technical” water filtration systems—that is, systems that relied on electricity from the grid, required extensive installation or maintenance from an English company, or forced Amish to use digital technologies not yet approved by their church’s Ordnung. Third, and perhaps most threatening to the company’s advisory role, the device was advertised to change the bonding angle of water. It was said to revert water back to its “truer” form, a form customers claimed existed in the Garden of Eden. After a change to the water’s bonding angle, this water was supposed to be easier for human and nonhuman bodies to absorb. Given this language, the water device was immediately denounced by the feed company in their weekly meetings as a “quack” technology that could potentially endanger both the animals and their farmers adopting it.<sup>27</sup> The feed company salesmen even coined a few disparaging nicknames for the device, such as the “Eden System” and the “Adam and Eve System.”

In the view of the feed company, this was not the first time quack technologies or products had infiltrated the farms of Amish communities. The president of the company described to me an earlier incident when charcoal was being sold as a special feed supplement for cattle. One veterinarian told me that Amish farmers were also known to adopt odd, “traditional” remedies for animals that have long been disputed. He shared an anecdote of an Amish farmer inserting onions into a horse to help with her fertility.

These sketches do not do justice to the community at large, which is varied in its methods and approaches toward new technical or scientifically based advice. I witnessed a wide spectrum of technological adoptions made on different interpretations of worldliness in a given Ordnung. Some Amish farmers rented the properties that held their cows, and in these instances used the electricity and machines found on these properties. Others integrated computerized systems onto their own farms using church-approved generators. Still, others adopted what we may consider more technically advanced products. Genetically engineered crops and synthetic bovine growth hormone, for example, were used on many of the farms I visited.<sup>28</sup> Considering water filtration devices in particular, farmers bought nitrate filtration systems and reverse osmosis technologies. While some of these systems were comparable in price to the

27. Talya was flagged by a few “quack watch” websites. See Lower, “Water Cluster Quackery.” The feed company salesmen worried the device could contribute to cases of stray voltage—when electricity passes through drinking water. See Caldwell, “Stray Voltage Affects Cow Behavior, Milk Production.”

28. For more information about the Amish use of genetically engineered technologies, see Kelly, *What Technology Wants*, 222. Since my research, synthetic bovine growth hormone has been phased out of most farms from my field site due to an increased number of dairying contracts prohibiting its use.

Amish-sold water technology, which had a price tag of about \$1500, others cost three to five times more than these “Eden Systems.”<sup>29</sup>

The Talya Water System was different for a few other reasons. The technology threatened the feed company partially because of its unpredictability, and partially because of its inability to be legible to the empirical reasoning the company used to formulate their advice. Computers and reverse osmosis systems were legible and used by many of the salesmen on their own farms. A veterinarian could dispute onion therapies, and charcoal could be tested using laboratory instruments on- and off-site. The Talya Water System, however, was thought to perform a task that was untestable.

When salesman Gene asked to test a farmer’s water before and after his Talya Water installation, he was met with great animosity. The farmer refused to allow the water to be tested and quoted his “faith” in the system. Gene was frustrated by this interaction and took the farmer’s decision personally. He explained to me that the farmer must have “known” it did not work and that the installation was an act of resistance against the company. Other company salesmen speculated that the Amish salesman of the Talya System told customers that testing would not prove the efficacy of the product. This was because what the device claimed to do—that is, change the bonding angle of the water—was not known to be testable.

The English feed salesmen were not the only ones skeptical of the product. Many fellow Amish farmers located across the country found the Talya Water System to be “faddish.” This skepticism is documented in popular Amish and Mennonite magazines such as *Family Life*,<sup>30</sup> in which one writer from Wisconsin voiced his caution against such “water machines”:

There are a lot of misrepresented ideas out there that are certainly not scientific, or even borderline scientific. Many readers of *Family Life* are gullible enough to accept anything that comes along. One has an idea or product that is key to mankind’s ills. Another has something different, but it too is thought to correct the maladies of mankind. In our community right now it is water machines. If you drink water that has been treated

29. In March 2017, I found one person selling Talya Water devices online. The woman identified as a raw foods and health expert, and had a \$1900 price tag on the system. Her shop with the system has since been deleted, but she is still a consultant. See Karen’s Holistic Health, [www.karensholistichealth.com/](http://www.karensholistichealth.com/) (accessed January 1, 2019). A device with a \$1500 price tag was also logged in a Nantucket-based newspaper more recently. To access a web cached version of this entry, see *The Inquirer and Mirror*, “Classifieds,” [webcache.googleusercontent.com/search?q=cache:S4Ri7oL4NIUJ:marketplaceadsonline.com/marketplace/manan/search/query%3FcategoryId%3D%26searchProfile%3Dretail%26source%3D%26page%3D42%26size%3D50%26view%3Dlist%26showExtended%3Dfalse%26startRange%3D14%26keywords%3D%26\\_classification%3D1%26location%3D%26postCode%3D%26searchRadius%3D%26searchUnit%3DMILES%26ordering%3DBY\\_PRICE\\_DEC+%&cd=14&hl=en&ct=clnk&gl=us](http://webcache.googleusercontent.com/search?q=cache:S4Ri7oL4NIUJ:marketplaceadsonline.com/marketplace/manan/search/query%3FcategoryId%3D%26searchProfile%3Dretail%26source%3D%26page%3D42%26size%3D50%26view%3Dlist%26showExtended%3Dfalse%26startRange%3D14%26keywords%3D%26_classification%3D1%26location%3D%26postCode%3D%26searchRadius%3D%26searchUnit%3DMILES%26ordering%3DBY_PRICE_DEC+%&cd=14&hl=en&ct=clnk&gl=us) (accessed January 1, 2019).

30. On the significance of this publication, see Igou, *Amish in Their Own Words*.

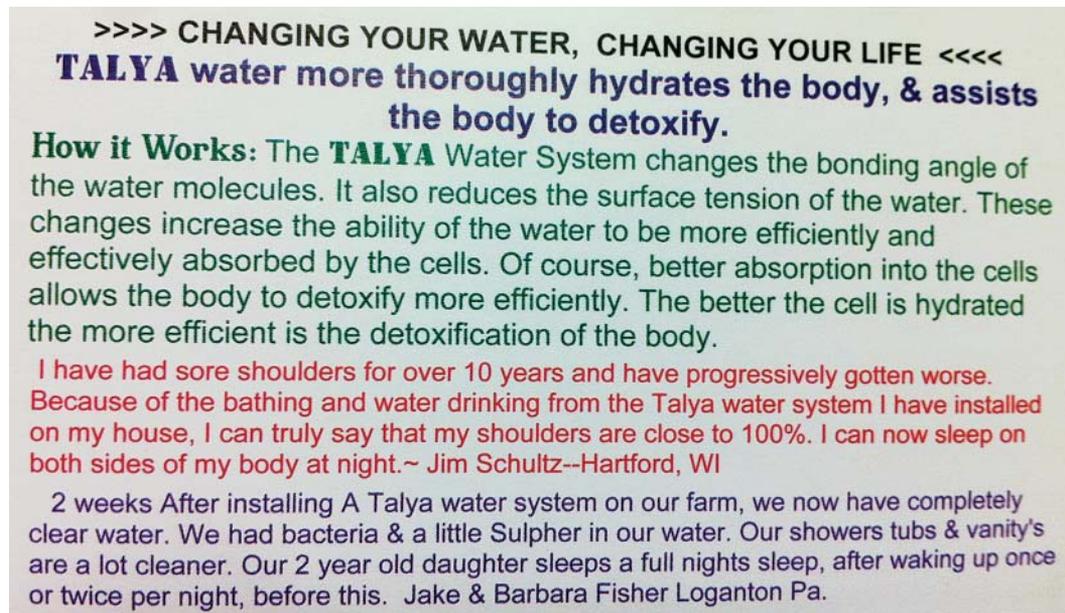


Figure 3. A Talya Water System informational card distributed by the Amish salesman. Photograph by author.

with this machine, you will realize great health benefits. . . . There may be some truth in it but it may also be just another fad.<sup>31</sup>

Still, the system remained popular and legitimate within other parts of the community. One 2015 advertisement by an Amish-owned real estate company in Ohio cited the Talya device as part of the larger filtration system accompanying a farm house.<sup>32</sup> Amish customers from Wisconsin and Pennsylvania contributed testimonials to the Talya salesman's 2013 informational card—the size of a business card with testimonials printed on both sides (fig. 3).

The feed company salesmen lamented about the device for the remainder of my time with the company. But surprisingly, after another month, the device became a nonissue. The handful of feed customers that bought it installed other filtration systems alongside their Talya machines. The feed salesmen speculated to me that it was because they did not get the milk production results they wanted from the device, the farmers keeping the Talya system installed next to the other machines as a reminder of their temporary lapse in judgment. However, after further investigation, I found the device was sometimes marketed as a *supplemental* filtration technology rather than a primary one—performing a different function entirely.

31. *Family Life*, 20.

32. See Northwood Auctions and Realty Services, "Schlabach Real Estate and Chattel Auction," [northwoodauctions.com/auctions/schlabach-real-estate-and-chattel-auction/](http://northwoodauctions.com/auctions/schlabach-real-estate-and-chattel-auction/) (accessed March 15, 2017).

I later learned that the Talya Water System signified something the feed company salesmen may not have fully considered in the moment of its adoption. As I discovered on the company website, in books that referenced the device, and in Amish newsletters, the Talya Water System was meant to perform a kind of *spiritual* labor that neither the feed company nor other English companies were able to provide. The system was a technological intervention into a larger environmental problem located within events from the Judeo-Christian timeline. Echoing the Anthropocene concept, the Amish adopted the device in the hope of counteracting the geological changes humans had made to the Earth, with the conviction that these changes had been caused by human sin (rather than secular understandings, from capitalism to carbon emissions). Weaving secular scientific evidence together with religious worldviews and timelines made the Talya System into a technology that occupied both worldly and Godly spheres.

### The Amish Anthropocene

The unique sense of techno-optimism that underscored faith in the Talya Water System relied on a braiding of sacred and secular worldviews that were expressed explicitly by the device's inventor. A white, "English" man named John Albright developed the device sometime in the early 2000s. Albright was hard to track down during my fieldwork, and in April 2017 I learned through a letter circulated by the Amish Talya salesman that Albright had passed away earlier that year. With Albright's passing, the company vanished, and the Amish Talya salesman sold his remaining Talya machines at discounted prices. Albright's death also led to the expiration of the main Talya Water System webpage, which was a primary source for descriptions, testimonials, and images of the device. Computer screenshots saved through the Internet Archive's Wayback Machine, the few blog and Facebook posts that are still active online, and my personal screenshots and transcripts from old website videos are all I have left of this elusive figure.

Albright named his water system Talya after the Hebrew word for "dew from heaven," which evoked the idea that water could be restored to an earlier, purer state through electromagnetic processes. In one informational video that was posted on the website, Albright described the purpose and inner workings of the Talya Water System in great detail. He claimed that the device used electromagnetism to inscribe a different energy pattern onto the treated water's "memory." He noted that he had found an energy fingerprint for water that helped it become less dense in "water clustering" and more "energized" for better overall nutrient absorption. Others interpreted this process as an "electrical stimulus swirl," which helped release the toxins that "dampen" water.<sup>33</sup> These individuals also cited studies conducted in Nebraska and Texas, which allegedly showed that Talya water increased the protein composition of alfalfa.<sup>34</sup>

33. Singleton, *Power of the Entangled Hierarchy*, 91.

34. Singleton, *Power of the Entangled Hierarchy*, 91.

When describing the spiritual function of the Talya system, Albright made particular reference to Noah's Flood:

Pre-Flood of Noah we had a situation on the Earth where we had rain as such: we had dew and mist. And the permeation of the plants and the growing things on the Earth at that time was awesome because the foods and growth of vegetation was beyond anything we've seen today. Part of the reason for that was not only the quality of water, it wasn't contaminated, it wasn't messed-up, but a major part of that was the size of the cluster. And that was anywhere between two and five a cluster. Now you say, "how do you know that?" Well, they take test borings down in the Antarctic and they bring that water up and they can tell you ages that water on the Earth was formed. And they test that water and they find out two to five is the size of the clusters in the water preceding the Flood.<sup>35</sup>

According to Albright, the Flood dramatically affected how water molecules clustered and bonded together, which led it to be more "contaminated" and "messed-up." In mainstream chemistry, some scientists predict that further research into how water manifests into clusters could explain unusual cases of temperature-dependent water density.<sup>36</sup> However, for Albright, temperature variation was not the only factor that affected water clustering and density. Human sin had materially manifested in the molecular structure of water during Noah's Deluge. To support such claims, Albright cited findings from ice borings in Antarctica—likely the Vostok ice core that was used by creationist scientist Larry Vardiman to support the Young Earth timeline.<sup>37</sup> To Albright, these findings demonstrated a particular shift in water density at the time when the Flood would have taken place. Albright took this change in water density, and its timing as inferred from ice borings, as evidence of how the human weight of sin materially impacted water at the global level.

Albright's use of ice cores to prove the existence and subsequent physical effects of Noah's Flood resonates with Stoermer and Crutzen's use of similar material to date the geological epoch of the Anthropocene at the British Industrial Revolution.<sup>38</sup> As Alessandro Antonello and Mark Carey have shown, ice cores can embody various temporalities and act as documents for thinking about different earthly pasts and possible futures.<sup>39</sup> The same cores are used to support multiple narratives in human history—including different starts to the Anthropocene. For Albright, the cores represented a stark material change in water at the time of the Flood, legitimizing the need for his Talya machine.

35. Unfortunately, the videos from the Talya website were not saved by the Internet Archive. To obtain a full transcript from this video, as well as screenshots, please be in touch with the author.

36. Liu, Cruzan, and Saykally, "Water Clusters," 932.

37. Seely, "The GISP2 Ice Core," 255–56.

38. Crutzen, "Geology of Mankind," 23; Crutzen and Stoermer, "Anthropocene."

39. Antonello and Carey, "Ice Cores and the Temporalities of the Global Environment," 198.

There are more formalized biblicist institutions that use this logic of interpretive timelines to describe other kinds of secular scientific evidence, including the Creation Museum.<sup>40</sup> At this museum, located in Petersburg, Kentucky, exhibits offer alternative chronologies for deciphering fossils, bones, and ancient human artifacts.<sup>41</sup> Dinosaurs are said to have occupied the Earth alongside Adam and Eve, with carbon-dating technologies criticized as inaccurate methods for establishing geological chronologies. And as noted by Susan and William Trollinger, the Creation Museum has particular significance for the Amish community, which is sometimes involved with the organization's outreach and building projects (including the construction of the Creation Museum's newest project, "Noah's Ark.")<sup>42</sup> The museum and its exhibitions act as sites for validation and religious reinvigoration in an increasingly techno-scientific world. Albright's water system makes a very similar claim, aligning his technology with the Creation Museum's and the Amish community's Young Earth sentiments.

Albright's Talya Water System and its adoption by a portion of the Amish community is grounded in a sacred timeline, which has much in common with current Anthropocene discourses. The use of timelines in both instances reflect attempts to identify past "falls" that continue to affect present day conditions. For this Christian community, the era of human influence on the Earth's ecology is neither framed by industrialization, as pressed by Stoermer and Crutzen, nor by the atomic bomb, as Jan Zalasiewicz and others have argued, but rather by the two Christian falls: Adam and Eve's expulsion from Eden and Noah's Deluge.<sup>43</sup> This sacred timeline is shared by much of the Amish community, a timeline that is used to make sense of the findings of secular science in Amish cosmology. The Talya case shows the Amish legitimize their adoption of certain technoscientific ideas by braiding their religious, community-based worldviews with outside, worldly, secular scientific ones.

*Family Life*, the Amish magazine mentioned earlier, records this ontological braiding inherent in the Amish Anthropocene timeline, including some internal debates in this discursive process. Before denouncing the claims of the Talya Water System, for example, the 2011 Wisconsin writer described the significance of Noah's Flood in the context of hybrid breeding and genetically engineered seeds. He noted, "Races and subspecies developed as a result of separation and either natural selection or selective breeding (in the case of dogs) after the Flood. In each of the animals were the genes of all the species of that particular 'kind.' As the species became separated and inbred, genes were lost. This is not evolution, but the opposite. It supports the Biblical account

40. The Institute for Creation Research, of which the earlier-mentioned Larry Vardiman was a part, is also an example of such institutions. Ken Ham, the founder of the Creation Museum, worked for the institute early in his career. See Numbers, *Creationists*, 332.

41. Dauer, "Creationism, Mastodons, and Natural History in Kentucky."

42. Trollinger and Trollinger Jr., *Righting America at the Creation Museum*, 230.

43. Zalasiewicz et al., "When Did the Anthropocene Begin?"

of creation. The science of hybridizing is not tampering with the original.”<sup>44</sup> For this commentator, contemporary breeding practices were aftereffects of Noah’s Flood.

I found similar understandings of the consequences of the Flood voiced by farmers in the field, including a rare-breed poultry farmer who lectured at Family Days on the Farm in July 2013. He noted during his presentation how Plain farmers, like the Amish and Mennonites, were able to better achieve “preindustrial tastes” given their commitments to a biblical timeline.<sup>45</sup> The Flood was his marker for when breeding and tastes started to change in the history of domestication. For others in the community, the Flood marks the moment human lifespans began to significantly decrease: from Noah’s nine hundred thirty years to the seventy-to-eighty-year lifespan found in Psalms.<sup>46</sup> Many letters published in *Family Life* argue that the conditions of Eden may never be reached through technological shortcuts because the falls are meant to be irreversible, life-altering moments in Christian doctrine, at least until the Second Coming. Still, the *promise* of intervention into these sacred historical events using technology has been difficult for members of this community to ignore. The adoption of the Talya Water System illustrates a faith in technology that mirrors discussions of techno-optimism, relying on humanity’s “extraordinary powers,” as described in *An Ecomodernist Manifesto*, to correct the effects of human-induced ecological damage that define the Anthropocene era.<sup>47</sup>

While the feed salesmen described the Talya Water System as “com[ing] out of nowhere,” the device’s inner workings have a longer intellectual history rooted somewhat outside Amish cosmology and creationist science.<sup>48</sup> In fact, the claims of denser water in need of technological “conversion” had particular meaning and promise that has existed for over a century. Albright’s use of the terms *water memory* and *bonding angle* are reminiscent of scientific language used by theosophists in the early twentieth century.<sup>49</sup> Annie Besant, a theosophist, used South Asian mysticism to describe the “bonding angle” and “memory” of hydrogen and oxygen in the elemental fusion of water.<sup>50</sup> As

44. *Family Life*, 20.

45. Plain farmers, in this context, refer to the Anabaptist denominations I mentioned earlier. This poultryman was Mennonite.

46. *Family Life*, 19.

47. See Asafu-Adjaye et al., “An Ecomodernist Manifesto.”

48. This claim of an intellectual history “somewhat outside” these cosmologies is a testament to the research that needs to be continued in this historical area. Connections between organic and biodynamic farming are already beginning to be made, and it is possible that the Amish are implicated in the diffusion of these scientific ideas. See Paull, “The Betteshanger Summer School.”

49. Theosophy was a religious movement founded in the United States by Helena Blavatsky in the late nineteenth century. Theosophical doctrine is said to have influenced the late twentieth-century New Age Movement. Anthroposophy, which also influenced the New Age, branched away from Theosophy in the early twentieth century. See Hammer, *Claiming Knowledge*; and Ruse, *Gaia Hypothesis*.

50. Besant and Leadbeater, *Occult Chemistry*. Besant completed this volume with Charles W. Leadbeater as her assistant. She is often credited as the sole author, likely due to Leadbeater’s tumultuous history with the Theosophical Society.

an outspoken feminist and class activist who advocated for birth control in Britain and India, Besant was a controversial figure in her time.<sup>51</sup> Her use of clairvoyance to visualize molecules—including these different angle arrangements and the purported memory of water atoms—has been described as a compelling historical case of resistance to the authority of colonial science.<sup>52</sup> She yoked Hindu epistemologies to atomic science and embraced “enigmatic and mystical explanations of the nature of matter.”<sup>53</sup> Considering this small aspect of the Talya System’s intellectual hydrological history, the Amish Anthropocene’s sacred timeline and technological solutions are part of a much more complex exchange of historical ideas and worldviews. Such connections complicate the seemingly clear boundaries that exist between Amish and non-Amish life and ways of knowing, as well as the boundaries between science and religion, pseudoscience and science proper, and the sacred and the secular.

The writings of anthroposophical scholars further reveal the messiness of this intellectual trajectory for understanding how ecological changes occurred due to spiritually located events found in the Bible. Rudolf Steiner was the founder of anthroposophy, which was based on Besant’s Theosophy but located in Christian, rather than South Asian, mysticism. Steiner placed his discussion of “water memory” particularly within theories of the lost city of Atlantis. In his lectures, Steiner made explicit claims about water, its potentiality, and its prior “thinness.” In one discussion about “Atlantean ancestors,” Steiner lamented the density of water and the limitations it imposed:

Equally certain however is the fact, perhaps even more inexplicable for contemporary physics and chemistry, that at that time the water on the whole earth was much *thinner* than today. Because of this thinness the water could be directed by the germinal energy used by the Atlanteans into technical services that today are impossible. As a result of the increased density of the water, it has become impossible to move and to direct it in such ingenious ways as once were possible.<sup>54</sup>

Steiner’s arguments about water’s thinness echo Albright’s testimony that the Talya Water System restores water’s potential to what it had been at the time before the Flood of Noah. And according to Steiner, the Flood marked the end of the Atlantean age.<sup>55</sup> Steiner further attributed Atlantis’s fall in that moment to the selfish misuse of what he called the “life-force,” which enabled the civilization to harness the energy of thin water.<sup>56</sup> Outside anthroposophical circles, some creationist scientists speculate that Noah’s Flood destroyed the civilization of Atlantis, their biblicist interpretations

51. Sreenivas, “Birth Control in the Shadow of Empire”; Janssen, “Talking about Birth Control in 1877.”

52. Bhattacharya, “Victorian Occult Atom.”

53. Bhattacharya, “Victorian Occult Atom,” 209–10.

54. Steiner, *Cosmic Memory*, 18.

55. Steiner, *Atlantis*, 93.

56. Steiner, *The Submerged Continents of Atlantis and Lemuria*, 10.

aligned with Albright and Steiner's theories that globally water became denser after this event.<sup>57</sup>

In accounts that link the Flood and its destruction with selfishness or sin, we see Amish, English creationists, theosophists, and anthroposophists agree that humans have negatively impacted the Earth. Humans not only polluted the water by increasing its density via the Flood, but they affected the water *spiritually*. The spiritual weight of human sin made water denser and spoiled its purity. Mirroring the Amish case, the aforementioned groups have also employed technological solutions to actively revert earthly conditions. Biodynamic agriculture, based on anthroposophical science, uses techniques to better harness "stimulus swirls" in fertilization. Viktor Schauberg's anthroposophy-influenced implosion machines, which use these swirls to energize water, resemble Albright's Talya Water System.<sup>58</sup> Both devices have been embraced with hopes to improve current earthly conditions.

Though Stoermer and Crutzen's Anthropocene is an empirically definable—even if debated—geological era, I would stress that the Amish adoption of the Talya Water System represents the importance of describing human forces on the Earth with consideration for spiritual actors and spiritual acts. The case of this system, including its intellectual foundation in Indian spiritualist, Christian mystical, and New Age groups, followed by its adoption by members of the Amish community, troubles assumptions about how seemingly insular and unchanging social groups embrace outside ideas and the technologies that fuel them. This case signifies the importance of incorporating different worldviews into the concept of the Anthropocene. Only if we engage with different timelines and historical processes can we formulate a concept that captures the entire *anthropos*.

The Amish Anthropocene is a sacred timeline that allows us to consider interactions between body and spirit, faith and action, belief and practice in a community that sees the Earth as a domain influenced by divine powers. God's influence is determined by human actions, particularly sin, which physically spoils the purity of creation. As religious scholar Robert Orsi has argued, spiritual understandings of the Earth and the use of material evidence to promote them may be off-putting to secular-minded scholars.<sup>59</sup> Yet, as academics continue to discuss plurality and commensuration in the Anthropocene, the Amish case demonstrates an additional site or "common ground" through which to articulate our current ecological problems. The case emphasizes the necessity to continue to find ways to incorporate sacred notions of the Earth found

57. For creationist authors on this theory, see Ham and Hodge, *How Do We Know the Bible Is True?* For an academic archaeologist, see Freund, *Digging through History*.

58. More on Schauberg's interests on water memory and energized water can be found in Coats, *Living Energies*; and Bartholomew, *Hidden Nature*.

59. This is in response to what Orsi calls the "comfort of academic distance." He notes an interaction with a religious studies colleague who emphasized such understandings of the world "are wrong" and "actually mean" something else. See Orsi, *Between Heaven and Earth*, 150.

across religious groups into these discussions. Environmental change and the human impact on it is made meaningful when diverse ways of knowing the Earth can be considered together and recognized as inextricably interwoven.

### **Making Environmental Change Meaningful**

#### *Meaningful Timelines*

What work has the Anthropocene done since its introduction in 2000? The concept has been contested, modified, and embraced by the academic world in an effort to draw attention to human impacts on geological, ecological, and atmospheric conditions. To some, to claim the Anthropocene is to mobilize a new environmentalism.<sup>60</sup> It is also to recognize suffering felt by both vulnerable human and nonhuman populations, with an urgent plea to reduce the impact of industrial forces on earthly systems.<sup>61</sup>

One convincing quality of the Anthropocene is its timeline and how scientists have used rock, soil, and ice to describe human impact on the Earth. Adding scientific legitimacy and geographical vastness to the Anthropocene idea, Stoermer and Crutzen located their term in geology. Geographers Simon L. Lewis and Mark A. Maslin have since analyzed the differing views on periodization of the Anthropocene, proposing that the beginning of the epoch could lie anywhere between 1610 and 1964.<sup>62</sup> To them, the specific date(s) we choose allow us to see history from different angles.<sup>63</sup> While the ultimate event that caused the Anthropocene is left to interpretation, proposed interventions target the most damaging moments of this ecological epoch when formulating sustainable environmental solutions.<sup>64</sup>

These damaging events may be meaningful to some groups of people, but not necessarily others. The Amish, for instance, may feel less implicated in the industrial revolution or nuclear warfare, particularly because they did not participate in these events. Though scholars maintain that the Amish benefit from these larger developments,<sup>65</sup> the community is active in eschewing these worldly constructions. The Amish have avoided warfare as a pacifist community, and they disavow the industrial technologies most implicated in some types of anthropogenic emissions, including cars. They live day-to-day based on their own conceptions of history, which they locate in understandings of Christian salvation rather than secular events.<sup>66</sup>

60. Lorimer and Driessen, "Wild Experiments at the Oostvaardersplassen."

61. Hamilton, Bonneuil, and Gemenne, *Anthropocene and the Global Environmental Crisis*.

62. Lewis and Maslin, "Defining the Anthropocene."

63. Lewis and Maslin, "Defining the Anthropocene," 177.

64. "An Ecomodernist Manifesto," for example, locates damage in the inefficient use of nature. Intensification is considered one solution to reverse this damage.

65. Particularly industrialized society, see Kelly, *What Technology Wants*, 231.

66. When the Amish teach American and world history, they usually use texts that emphasize evangelism and mission work. Historical figures are used to illustrate good characters. See Johnson-Weiner, *Train Up a Child*, 142.

One way to make human impact on the environment more meaningful to this and other biblicist groups is to place the Anthropocene within a timeline that is legible to them. The Amish embrace of the Talya Water System is representative of this idea. It is important to consider not only secularized understandings of history when marking the Anthropocene but also religious ones. As George Handley has emphasized, considering the significance of Pope Francis's *Laudato si'* for environmental humanists, "the sacred and the secular have more common ground and common strategies than we might realize."<sup>67</sup> Timelines help constitute a common ground to begin conversations about common strategies—like techno-optimistic ones, if we so choose—for addressing ecological problems. If contestation of the Anthropocene timeline is a meaningful theoretical exercise to make more human groups feel implicated in environmental change, secular scientific narratives and geological boundaries have their limitations. If we want to incorporate other worldviews when considering Anthropocene starting points, perhaps the Flood should be taken more seriously as a marker of this human epoch.

#### *Meaningful "Response-ability"*

Making environmental change meaningful, however, cannot rely solely on geological timeline building. While timelines help link human responsibility to specific events, they do not account for everyday actions that continuously affect our environment. In this context, the scholarship of Andreas Malm, Jason Moore, and Donna Haraway, among others,<sup>68</sup> is important to move the Anthropocene concept beyond the scientific timeline and into discussions about cultural behaviors and philosophical ideologies. Malm and Moore, on the one hand, locate the Anthropocene squarely within the accumulation of capital, Malm emphasizing inequality and empire, and Moore pressing the development of "cheap nature."<sup>69</sup> With the designation of the "Capitalocene," both scholars have teased out the significance of global trends based on historical relationships.<sup>70</sup> Haraway's "Chthulucene," on the other hand, is a feminist response to both the Anthropocene and Capitalocene. Her intervention emphasizes multispecies assemblages and kin-making in the uncertainty of Earth's future form, which may not include humans.<sup>71</sup>

These concepts map responsibility for earthly changes onto groups by considering accumulated actions or sustained relationships rather than period- or geography-specific events. This distribution of responsibility allows us to recognize that there are

67. Handley, "Laudato si' and the Postsecularism of the Environmental Humanities," 278.

68. The literature regarding such interventions is vast, and I will only include two that propose new names to their systems. Other important contributions include Plantationocene, Anglocene, Anthrobrocene, Homogenocene, and the Gynocene. See Demos, "Anthropocene, Capitalocene, Gynocene"; Mentz, "Neologismcene"; Steel, "Unseasonal"; and Norgaard, "Econocene and the California Delta."

69. Malm, "Who Lit This Fire?"; Moore, "Rise of Cheap Nature."

70. Malm, "Who Lit this Fire?," 241; Moore, *Capitalism in the Web of Life*, 176.

71. Haraway, *Staying with the Trouble*.

entangled structures in place that humans act within and that, in turn, complexly affect the condition of the Earth. As Haraway insists, “entering into responsibility,” and achieving “response-ability,” means paying attention to these seemingly mundane relationships between humans and nonhuman others.<sup>72</sup> Response-ability, however, may look different when attention is paid to those relationships built with religious, supernatural entities. It requires recognizing what Bronislaw Szerszynski has called the “geo-spiritual formation” of a given group of people.<sup>73</sup> The way different communities unite together Earth’s material qualities, sociopolitical circumstances, and spiritual agencies is unique, even within broad-strokes Christianity. The Catholic case interrogated by Szerszynski in his critique of the *Laudato si’* looks different across Protestant, Orthodox, and regionally distinct Christian groups.<sup>74</sup> Mapping how geo-spiritual formations—and thus everyday actions and attitudes toward responsibility for nonhuman nature—are unique to these groups is an important exercise. Only in doing so can we see the many ways in which these elements are merged by religious communities. For the Amish, entering into environmental responsibility mirrors some aspects of a geo-spiritual relationship, but biblical interpretations become the binding agents holding the integrity of Amish-ness together. The Amish are sustained as a community through their relationships to one another, in their relationship to these specific interpretations of the Bible, and in their relationship with God.

Those familiar with Amish life may assume that the community has already enrolled in environmental responsibility. The relationship most cited by scholars who see the Amish as environmental exemplars is their connection to God—where the Amish are considered innately environmentally conscientious given their duty as “stewards of the land.”<sup>75</sup> English admirers of the Amish have exhausted this interpretation since the first half of the twentieth century. Andrew N. Case, for example, has shown that ecologist Paul Sears identified Amish and Mennonite communities as agricultural exemplars in the wake of problematic “modern” agriculture as early as 1935.<sup>76</sup> In 1940, conservationist Louis Bromfield described the Amish as “lifelong stewards of the land” in his *Pleasant Valley*, and agricultural pioneer Jerome Rodale used the community as a constant reference for his *Organic Gardening and Farming* in the 1950s and 1960s.<sup>77</sup>

The Amish continue to inspire convictions for alternative agriculture and food production. Wendell Berry’s captivation with the community and its potential to inspire others is the subject of one chapter in *Bringing It to the Table*.<sup>78</sup> Berry’s faith in them stemmed from the work of Amish writer David Kline, who argued Amish life “gave

72. Haraway, *When Species Meet*, 36, 93.

73. See Szerszynski, “Gods of the Anthropocene.”

74. Szerszynski, “Praise Be to You, Earth-Beings.”

75. Hostetler, *Amish Society*; Redekop, *Creation and the Environment*.

76. Case, “Idealizing an Organic Landscape.”

77. Case, “Idealizing an Organic Landscape,” 85.

78. Berry, *Bringing It to the Table*.

back” to the Earth much more than it took from it.<sup>79</sup> Michael Pollan has also fondly addressed the community in the context of his food criticism, citing the Amish as “good” and “sustainable” farmers.<sup>80</sup> There seems to be something inherently inspiring about them, their eschewing of technological advancements, and their dedication to an older agricultural moment. If industrialization caused the Anthropocene, preindustrial methods could be solutions to slow or reverse the destructive impact of such forces. The Amish have come to personify preindustrial life, life *before* the Anthropocene.

In reality, the reasons that Amish do not adopt automobiles and tractors are not primarily about the environment. Rather, this abstinence derives from those earlier mentioned biblical interpretations of worldliness and the risks associated with adopting these devices when attempting to achieve community homogeneity.<sup>81</sup> Amish traditions do not always sit well within environmentalist concerns.<sup>82</sup> Their adoption of the Talya system was not made solely on the grounds of environmental stewardship, but rather because its mission resonated with the important biblical interpretations that sustain Amish ways of living.

As David L. McConnell and Lyn D. Loveless detail, the assumption that the Amish are ideal environmentalists—what they call the image of the “Ecological Amish”—is partially a myth constructed by non-Amish onlookers.<sup>83</sup> In fact, these scholars show that the Amish response to environmental problems like climate change reveal the community’s deep skepticism of environmentalists.<sup>84</sup> I have argued that the adoption of the Talya Water System was based on the technology’s alignment with biblicist doctrine, namely the notion that water has a quality that is physically and spiritually linked to human responsibility that is historically marked by the Garden of Eden and Noah’s Flood. This intricate cosmological network sets the Amish apart from other Christian groups. Responsibility and response-ability for environmental change are understood within both a religious and community framework. They are linked to ideological accountability of sin and future hopes for salvation.

### **Messianic Hopes in an Amish Anthropocene?**

There are aspects of the Amish Anthropocene that may seem more like a dead-end than an open opportunity for addressing environmental commensuration between sacred and secular spheres. Like other biblicist communities, the Amish choose which

79. Kline, *Great Possessions: An Amish Farmer’s Journal*. Kline has also been cited as a source for promoting Amish ways of farming in Stoll, *Larding the Lean Earth*, 220–26.

80. Sutton, “Lancaster Farming Speaks with Michael Pollan.”

81. Kline, *Consumers in the Country*; Wetmore, “Amish Technology”; Kelly, *What Technology Wants*.

82. For example, Amish agricultural methods have been called into question by environmentalists concerned with nitrate pollution in the Chesapeake Bay. See Kraybill, *Amish and the State*, 304.

83. McConnell and Loveless, “Are the Amish Environmentally Minded?” They propose similarities between the Amish and the Native Americans, citing Krech, *Ecological Indian*.

84. McConnell and Loveless, *Nature and the Environment in Amish Life*.

theories, practices, and technologies best fit their worldviews as interpreted through biblical scripture, which may not include the best environmental solutions. Studies suggest that fundamentalist Christian communities use such strategies to promote distrust in the notion of man-made climate change.<sup>85</sup> Additionally, Christian anticipation or hope in the Messiah's Second Coming may equally impact this resistance to climate change.<sup>86</sup> However, in its choosiness, contradictions, and uncanniness, the Talya case above suggests there is room for recognition, reconsideration, and reinterpretation in even the most insular religious communities. Thinking with an Amish Anthropocene may help us to seriously consider the ways at least one community, if not many surprisingly connected communities, begins to align technoscientific adoption with sacred values and worldviews—grounding hopes and illuminating future possibilities for commensuration.<sup>87</sup>

The Talya Water case is unique for the Amish because it demonstrates that hope is not only located in the purpose or actions of God or the Messiah; it can also be found in technology.<sup>88</sup> The case highlights the complexities inherent in a concept like “messianic hope.” For this Christian community, the moment of this machine's adoption demonstrated that there could be simultaneous anticipation of future Heavenly salvation alongside hopes for a restorative earthly future—where nature on Earth could return to its earlier, Edenic state through present-day technoscientific efforts. These numerous threads of anticipation echo the multiplicities of possibility and hope explored by scholars like Eben Kirksey. Rather than messianic hope being “contentless” or embodied in a sole figure, Kirksey and others emphasize how such hope can be grounded in many different kinds of beings and projects, from cleaning hermit crabs after oil spills to maintaining aquariums for endangered frogs.<sup>89</sup> In my Amish case, hope was pinned onto a technological object embodying sacred and secular spheres. The Talya System thus provides an occasion to reframe one's engagement with fundamentalist religious communities—highlighting those possibilities in commensuration rather than perpetual dissent. Braiding together these various threads of religiosity and secularism requires re-emphasis of the fact that sacred ways of knowing and defining our Anthropocene are crucial for building a common ground to discuss environmental concerns, and this includes the fundamentalist Christian worldviews that are often held at a distance from academic scholarship.

Many scholars, for instance, have demonstrated the importance of acknowledging the Christian historical roots of our current ecological problems. In his seminal text,

85. Ronan, “Religion and the Environment.”

86. Barker and Bearce, “End-Times Theology, the Shadow of the Future, and Public Resistance to Addressing Global Climate Change.”

87. See Kirksey, “Hope.”

88. This extension of hope and trust is significant considering how religious groups may resist environmental intervention and the notion of anthropogenic climate change due to complete hopes in God and otherworldly salvation. See Deane-Drummond, “Pope Francis,” 258.

89. Kirksey, Shapiro, and Brodine, “Hope in Blasted Landscapes,” 50; Kirksey, *Emergent Ecologies*, 53.

“The Historical Roots of our Ecologic Crisis,” Lynn White proposed that our environmental troubles originate with the Christian axiom of nature existing to serve man.<sup>90</sup> White emphasized that just as the history leading to these problems is religious, the solutions must also bear religious resonance.<sup>91</sup> Focusing on the issue of climate change, Lydia Barnett demonstrates that Western Christianity was important for eighteenth-century understanding of humans as global geological agents. Her historical actors, much like the Amish of my field site, debated the role of sin and its impact on bodies and landscapes. Barnett emphasizes the “religious motivations that launched scientific inquiry” into climate change, demonstrating how these understandings of the world helped form the foundation of concerns about environmental disaster today.<sup>92</sup> Even if “their Anthropocene is not our Anthropocene,” the idea of human-induced environmental change is already a by-product of these historically entangled cosmologies.<sup>93</sup>

Latour underscores the entanglement of these historical cosmologies in present-day thought in *Facing Gaia*, where the Anthropocene, what he calls the “New Climate Regime,” is predicated on counter-religious shifts. Certainty in entities like God have shifted to certainty in entities like Science and the State, which continue to take up Nature as a religious domain linked to these longer, religious histories. To combat this old frame and “rematerialize” the world, Latour suggests a “wholly secular” universal figure that exists outside these entanglements: Lovelock and Margulis’s Gaia.<sup>94</sup> However, there is a danger in this push for secularization. Such recommendations ignore how communities like the Amish continue to make decisions in the world. To build serious relationships with such groups, we do not need to make the secular more secularized. We need to recognize how “desecularization” aids in aligning or braiding coexisting cosmologies in this climatic regime.

Scholars usually locate present-day efforts to “desecularize” the Anthropocene in discussions of sublime nature or with particular attention to science presenting spiritual qualities or indigenous worldviews.<sup>95</sup> Considering the Earth a spiritual entity is a helpful illustration in efforts to re-personalize connections between human and nonhuman worlds. These efforts are also important postcolonial attempts to destabilize Western ways of knowing. Desecularization can potentially allow disparate groups to share the Anthropocene across timelines and spiritual entities. And, for the case of the Amish variation of this epoch, technoscientific intervention into the Anthropocene may be cast in a hopeful light, a possible future as expressed by an assumed technologically ambivalent biblicist community. The Talya Water System, in its promises to revert

90. White, “Historical Roots of our Ecologic Crisis,” 1206.

91. White, “Historical Roots of our Ecologic Crisis”; Handley, “Laudato si’ and the Postsecularism of the Environmental Humanities,” 280.

92. Barnett, “Theology of Climate Change,” 219.

93. Barnett, “Theology of Climate Change,” 232.

94. Latour, *Facing Gaia*.

95. Szerszynski, “Gods of the Anthropocene,” 254.

water back to its Edenic state, operated as a kind of technology of what Kirksey, Shapiro, and Brodine have called “modest biocultural hope” of the Amish Anthropocene.<sup>96</sup>

This is not to say that we need to personally embrace Young Earth creationist science, convert our convictions, or realign ourselves politically. There is something powerful about the narratives and imagery that we choose to accept and execute using the Talya Water System as a guide. The impossible but ambitious task of restoring Eden in the Anthropocene can be aligned with various modest efforts to consider scientifically backed attempts for biodiversity, limited greenhouse gas emissions, and preparation for unpredictable weather conditions. Christian worldviews and secular scientific ones can be braided together in a way that enhances cooperation and respect across human groups. The Amish adoption of the Talya Water System demonstrates that many groups desire to intervene into the larger environmental problems humans have had a hand in creating.

### **A Kidney Conclusion**

I will end this discussion with an application of the Amish Anthropocene as a site for commensuration, which positioned ideas of animal welfare within a biblicist context. Though the feed company I worked with may not have reacted empathically to the Talya Water System, they were sensitive to the power that resided in scientific narratives that were framed with Amish worldviews. I witnessed an example of this at one of the company-hosted educational workshops. On a sunny day in June, the company used the workshop to educate their customers on the intricacies of calf health. To this end they invited a veterinarian to complete a public calf dissection for their feed customers. This veterinarian used the dissection to lecture about the important organs in bovines, showing the farmers each organ and describing what they could do to ensure calf health.

The veterinarian was a charismatic orator who, with his vocal fluctuations and gesticulations, instantly reminded me of a Baptist preacher. When speaking to the small size of the calf he was cutting into, he noted to his audience that the calf was born in a way that “God did not intend.” He talked about the history of breeding, and how most bovines in the past had been born in the spring. The veterinarian emphasized that it was the farmer’s duty to ensure the health of the creature under today’s conditions, including shading calves to avoid heat stress if born in the summer and bundling them up with jackets to keep them from freezing in the winter. As he pulled out the calf’s esophageal tube, he instructed the audience to feed calves in the same way their mothers would have fed them. He described the importance of a slow milk flow so calves would avoid milk indigestion in the fourth stomach, which could cause scours.

96. See Kirksey, Shapiro, and Brodine, “Hope in Blasted Landscapes,” 30. As a technology embodying a specific understanding of the world, the Talya system could also be called a “cosmogram” that concretizes modest biocultural hope. See Tresch, “Technological World-Pictures,” 92.

When the veterinarian reached the kidney, he lifted it above his head and announced it as his favorite organ because it “proved the existence of God.” Touching the organ’s many divots and sections, he explained that bovines are one of only a few species with multi-sectioned kidneys, and for him the reason was clear. Cattle were meant to be used by humans, and the Christian God had influenced nature to account for “human error.” The multi-sectioned kidney helps animals convert toxins in a way that does not harm them, meaning that if a farmer accidentally fed his animal dangerous material, the kidney (in theory) would correct the error. The Amish in the audience were generally receptive to the veterinarian’s advice. A handful took vigorous notes in the small spiral notepads they kept in their back pockets. Most of the farmers nodded enthusiastically in affirmation during the lecture. The narrative framing not only kept their attention but placed their actions more explicitly within their world. This was not patronizing. It was uplifting. It was validating a belief system, a worldview, and an identity.

The dissection of the kidney was an origin story.<sup>97</sup> With it, the veterinarian linked the origins of humans with the nonhuman world and emphasized how the spectators present at the event were affected by this history. Storytelling in this capacity has been cited as an important strategy for making climate change, among other scientific narratives, more meaningful across groups.<sup>98</sup> To make such environmental change meaningful, we need to explore the ways braiding worldviews builds relationships across seemingly disparate groups, providing opportunities for those possibilities of sacred-secular commensuration. Tying empirical discourse together with biblicist cosmologies may act as a meeting ground where other factors affecting the adoption of technology or other kinds of information can be confronted.

To begin to dismantle such factors—including political and intellectual assumptions across communities—taking differing worldviews seriously is an important first step. Braided storytelling is one way to demonstrate acceptance of multiple ways of understanding the world. Such stories grant agency not only to tellers but to listeners.<sup>99</sup> Considering the storytelling powers of this veterinarian and the inventor of the Talya Water System, the biblicist-focused Amish Anthropocene may allow important environmental information to be carried across different groups. We cannot start our environmental conversations by commanding assent to the claim that “climate change is real.” Perhaps we should instead start with, “In the beginning . . . ”

NICOLE WELK-JOERGER is a PhD candidate in the History and Sociology of Science Department at the University of Pennsylvania. Her current research focuses on human-animal relations in food production.

97. Retelling origin stories is a powerful exercise in forming alliances and breaking assumptions. See Haraway, “Primateology Is Politics by Other Means.”

98. “Fighting Climate Change May Need Stories”; van Dooren and Rose, “Lively Ethnography.”

99. See Jackson, *Politics of Storytelling*, 28.

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