

## 6. Coda

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The Svalbard Global Seed Vault, as the people and institutions behind it envisioned, designed, realised, use, and narrate it, is a “simple and straightforward” (Fowler 2008: 501) response to an existential social-ecological problem: the endangerment and loss of plant genetic diversity for food and agriculture both in farmers’ fields (*in situ*) and in genebanks (*ex situ*). In *Seeds on Ice*, Cary Fowler describes the Seed Vault’s “quiet rescue mission” (2016: 17) as follows: “It is about hope and it is about commitment – about what can be done if countries come together, shed suspicion and cynicism, and work cooperatively to accomplish something significant, long lasting, and worthy of who we are and wish to be.” (Fowler 2016: 18) The sociological inquiry into the Svalbard Global Seed Vault and agrobiodiversity conservation I have developed throughout this book has ultimately put a question mark over this account by asking: What exactly is it that the Svalbard Global Seed Vault is committed to? Who is the “we” whose hopes and commitments it brings together? And what precisely does this “we” “wish to be” and “accomplish” through the Seed Vault? Put simply, I have discussed what kind of a solution the Seed Vault effectively offers to the problem of global agrobiodiversity loss, or what exactly it ultimately acts as a solution and conservation technology for.

To do so, I have focused analytical attention on the Seed Vault not primarily as a facility and technoscientific instrument for long-term seed conservation – although that is certainly what it is. As a backup storage facility for the crop diversity held in seed collections all over the world, however, the Seed Vault is also a nodal point of a diversity of globally distributed agrobiodiversity conservation efforts, all situated in their own local worlds and histories. It is precisely this functioning of the Seed Vault as not only a technoscientific apparatus for crop diversity conservation but also an arena assembling a diversity of worlds and modes of world-making that I have put at the centre of my inquiry. Through this lens, I was able to show that the Seed Vault and the

kind of agrobiodiversity conservation it has been and might yet be capable of achieving come to matter in the interplay of a diversity of actors, practices, technologies, discourses, rationalities, stories, histories, imaginaries, hopes, and more. I want to conclude this book by reflecting on the implications of my study, firstly for the question of how to understand and approach agrobiodiversity loss and conservation and secondly for sociological engagement with contemporary social-ecological changes and challenges. With regard to the latter, what follows is not a conclusion so much as a reopening of the case of agrobiodiversity loss and conservation – an invitation to reckon with how certain ways of knowing and worlding the world are implicated in the losses ‘we’ seek to avert or adapt to and to reconsider how we know and world our world(s).

## 6.1 Rethinking Agrobiodiversity Loss and Conservation Through the Svalbard Global Seed Vault

To understand the complexity of the global social-ecological threat of agrobiodiversity loss and the ambiguities of the *ex situ* approach to agrobiodiversity conservation, it is crucial to historicise both agrobiodiversity loss and conservation. I began this book by situating the history of international agrobiodiversity conservation efforts from the mid-twentieth century onwards, which eventually led to the creation of the Svalbard Global Seed Vault, within the historical context of agricultural ‘modernisation’ (see chapter 1). This enabled me to show that the large-scale loss of agricultural biodiversity facing the world as a global social-ecological problem today is as much a *challenge for* as it is a *product of* modern agriculture and the modern world more generally. Through processes of crop homogenisation and the introduction of agro-chemicals into farming all around the world, which promised to make global agricultural production more productive and efficient, the modernisation and globalisation of agriculture in the second half of the twentieth century provoked the worldwide decline in agrobiodiversity that became the global ecological problem of “genetic erosion” (Frankel et al. [1969] 1970; Khoury et al. 2022; see chapter 1.2).

The rise of *ex situ* conservation as the key international strategy for saving the world’s plant genetic diversity from severe erosion is a manifestation of the international desire to maintain rather than challenge the modes of production underlying the loss of agricultural biodiversity while mitigating its existential effects. Similarly, the creation of the Svalbard Global Seed Vault as a safety backup for the global system of genebanks is a response to the vulner-

ability of the latter, in much the same way as genebanks are a response to the vulnerabilities of modern agricultural production. The irony of this approach to saving agrobiodiversity from loss is the following: conserving a plant genetic diversity *ex situ* that is not being cultivated *in situ*, in order to maintain a supposedly more efficient global monocultural agriculture, ultimately conserves the resourcist nature relations of modern agricultural production – and hence the very conditions for the (ongoing) loss, or rather destruction of the world's agrobiodiversity.

It seems reasonable, then, to raise the question whether *ex situ* conservation is an appropriate response to agrobiodiversity loss at all. Some critics in the non-governmental and civil society sector argue, along these lines, that the Svalbard Global Seed Vault evokes “a false sense of security” (GRAIN 2008: 1) in a world that continues to destroy agrobiodiversity *in situ* and that a more appropriate response to large-scale agrobiodiversity loss than conserving plant genetic diversity *ex situ* is cultivating agrobiodiversity *in situ* (see chapter 3.1). While there is some force to this problematisation, the dichotomic juxtaposition of *ex situ* and *in situ* conservation approaches overlooks the ambiguous ways in which the Seed Vault and *ex situ* conservation, like other technologies and practices of agrobiodiversity conservation, are situated and entangled in modes of knowing, being in, and enacting the world that are not reducible to either of these conservation approaches. Paying attention to the more-than-human relations, knowledges, and histories that divergent practices, technologies, and rationalities of agrobiodiversity loss and conservation are embedded in and enact allows for a more complex understanding of the more-than-human worlds and futures they give rise to.

The question that has particularly interested me in this book, therefore, is not which approach or technology is able to preserve agrobiodiversity more efficiently or sustainably, but which world(s) and modes of worlding conservation technologies and approaches are engaged in sustaining. Against this background, I have not centred analytical attention on the agrobiodiversity conservation efforts of the Seed Vault, but investigated the diversity of agrobiodiversity conservation efforts that become discernible *through* the Seed Vault. This has enabled me to show that, while the Seed Vault is an outgrowth of a world built on a “resourcist cosmivision” (Fenzi/Bonneuil 2016: 78) that sees and enacts the natural/ised world as a set of extractible resources, it is neither determined by nor necessarily restricted to reproducing this world and mode of worlding. Rather, as an arena assembling not only a *diversity of seeds* but also a *diversity of worlds*, the Seed Vault makes the question of what world/s and world-

ing/s it serves to sustain a matter of collective negotiation. A pertinent example of this is provided by collaborations with Indigenous depositors such as the Andean Potato Park, which not only bring seeds into the *ex situ* world but also confront the latter with fundamentally different modes of knowing, being in, and enacting the world (see chapter 4.2).

Through the contraposition of different worlds and modes of worlding the Seed Vault assembles, I have further raised the question of how to think about and address the issue of agrobiodiversity loss. In the *ex situ* world of conservation, loss of agrobiodiversity is tantamount to the loss of plant genetic resources required for adapting crops and agricultural production to changing ecological conditions. Insofar as more diversity holds more potential for successful adaptation, conserving plant genetic resources *ex situ* appears to be the obvious choice for managing *in situ* agrobiodiversity loss (see chapter 4.1). In this frame of thought, the prospect of having as many resources as possible to assist adaptation to all kinds of future environmental changes and challenges fosters faith in a plentiful rather than threatful future (see chapter 5.1). Underlying this understanding of and relation to loss is a resourcist understanding of and relation to the natural/ised world.

That the latter is not a universal ontology so much as a historically specific, situated way of knowing, being in, and enacting the world becomes discernible, again, in the example of the Potato Park. There, losing biological diversity, for one thing, means losing nonhuman community or family members. For another, it entails a loss of cultural identity and potentially one's world. Thus understood, loss is not only a problem to be managed, e.g. by means of technoscientific adaptation, but also an affective experience (both personal and collective) that may come with feelings and practices of grief and mourning. Through the examination of an art project in Svalbard commemorating the biocultural diversity excluded from the conservation efforts of the Svalbard Global Seed Vault, I have discussed what it means to rethink conservation in the context of an affective acknowledging of agrobiodiversity loss as an inevitable past, present, and future reality (see chapter 5.2). Aside from underlining the vital importance of conserving a diversity of worlds rather than merely a diversity of resources for a world cultivating agrobiodiversity loss, the example of the art project enabled me to explore the potential of performative practices of grief and mourning to counter the techno-optimism of the *ex situ* world of conservation with a "mournful hope" (van Dooren 2022: 179) that it may be possible to cultivate less destructive worlds.

## 6.2 Collecting Seeds of a Critical More-Than-Human Sociology For (or Against) the Anthropocene

My inquiry into the world of agrobiodiversity conservation through the Svalbard Global Seed Vault illustrates and performs the kind of sociological analysis of contemporary technoscientific and other world-making efforts I am convinced the current social-ecological condition urgently calls for. The present is a time of intersecting social-ecological catastrophes and transformations that are shaking the foundations and certainties of the modern world. This has become paradigmatically evident in the proposal scientists have advanced at the beginning of the twenty-first century, the idea that humanity's massive interferences in the earth's ecosphere have heralded the start of a new geological era after the Holocene, the Anthropocene (Crutzen/Stoermer 2000; Crutzen 2002).

The incessant multi- and transdisciplinary debate that has unfolded around the idea of the Anthropocene since then has drawn the attention of scholars across all academic disciplines as well as the non-academic public to a reality that feminist and decolonial theorists, Indigenous thinkers, and with them a number of critical anthropologists and sociologists have been pointing out for a long time: that the human, the cultural, the social, the technological, etcetera, on the one hand and nature, on the other hand, are not the ontologically distinct spheres that dominant Western thinking holds them to be. The Anthropocene debate has given rise to a quantitatively – if not qualitatively – unprecedented awareness of the fact that nature is not an ahistorically given, passive, non-agential surface, environment, and endlessly exploitable reservoir of resources with no value or purpose of its own beyond serving human 'development', but rather a dynamic, resourceful as well as recalcitrant, material reality deeply entangled in and co-emerging with societal formations that are always already and inevitably more-than-human.

The Anthropocenic awakening of the modern world (note: not *the* world) has fundamental implications for both the natural sciences and the social sciences and humanities. To this day, scientific knowledge production is to a large degree informed by the classical separation of the humanities and social sciences, on the one hand, as the academic authorities over largely human-centred ideas of culture, social life, actions, collectives, discourses, structures, power relations, etcetera, and the natural sciences, on the other hand, as the academic domain in charge of the nonhuman and natural/ised world. However, there are various bodies of knowledge in different academic

disciplines as well as inter- and transdisciplinary research fields that challenge this separation, highlighting the many entanglements of the supposedly distinct spheres instead. In this book, I have used the example of biodiversity loss and conservation to show how feminist and decolonial theory as well as debates in anthropology, STS, and political ecology can productively enrich a critical, post-anthropocentric sociology of social-ecological devastations and transformations.

It has been almost half a century since the US sociologists William R. Catton and Riley E. Dunlap (1978) first criticised the “Human Exceptionalism Paradigm” of sociological thought and made the case for a “New Environmental Paradigm” that should focus attention on the interdependencies between the social and the ecosphere. Their work was foundational for the emergence of environmental sociology as a subdiscipline of US sociology in the 1970s and also informed the emergence of environmental sociology in the European context in the 1980s. However, whereas the new subdiscipline of environmental sociology turned environmental attitudes, discourses, policies, and activism into a subject of sociological analysis, the paradigm shift Catton and Dunlap had advocated failed to materialise (including in their own research). Although environmental sociology has evolved into a thriving and multifaceted field of research in the past fifty years, it has largely remained a “sociology of environmental issues” (Dunlap/Catton 1979: 244).

As a result, the classical dichotomic understanding of nature and society as two different, albeit interacting spheres has largely remained unchallenged. Environmental sociologists have certainly developed or embraced approaches and concepts that theorise the interrelations and interdependencies of natural and societal realities such as social ecology, societal nature-relations, and environmental justice. However, more radically relational approaches that emphasise the ontological inseparability of the human from nature as well as the constructionist character and historical specificity of their separation, as have been developed for more than three decades in ecofeminism (e.g. Plumwood 1993; Sturgeon 1997), feminist materialisms (e.g. Haraway 1989, 1991; Barad 2003, 2007), anthropology (e.g. Viveiros de Castro 1998, 2015; Descola 1994, 2014), and decolonial political ecology (e.g. Escobar 1999; Alimonda 2011, 2019), remain rare.<sup>1</sup>

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1 Notable recent exceptions can be found in Leinius (2021) and Sempértegui (2021). It should also be noted that in the recent past, interest in the mentioned fields of research has grown in (environmental) sociology. Movements of thought such as the new

Corresponding to this epistemological profile, environmental sociology empirically fosters interdisciplinary collaborations that bridge the disciplinary separation of social and natural scientific expertise but leave its epistemological foundations intact. The social-ecological situation that the Anthropocene debate draws attention to, however, challenges the ontological segregation of the social and the natural in a way that requires not only bridging epistemic gaps but querying their epistemological foundations. What historians Christophe Bonneuil and Jean-Baptiste Fressoz have called “the shock of the Anthropocene” (Bonneuil/Fressoz 2017) is a fundamental challenge not only to modern ways of *being in* the world, but also and concomitantly to the hegemonic modern way of *knowing* the world. It has disrupted the modern certainty that the human is essentially and ontologically distinct from nature, as well as the assumption that nature is a passive surface and a reservoir of resources available for humans, societies, or cultures to occupy and use. The Anthropocene experience makes tangible, including for many of those who have heretofore managed to escape this reality, what feminist, post- and de-colonial, Indigenous, and other critical voices including the ones cited above and many more have been emphasising for a long time: that the dualistic ontological divide between the Human and Nature is not a universal truth, but the product of a historically specific, geo- and biopolitically embedded, and all but uncontested epistemology.

This onto-epistemology has historically served as a naturalising justification for centuries of appropriating and exploiting land, natural/ised resources, and labour (both nonhuman and human) as well as other ecologically destructive modes of being in, subjugating, and exploiting worlds for the prospering of the modern world. That world was built on the enactment of the idea that the “domination [of nature] is simply ‘natural’, flowing from nature itself and the nature(s) of things” (Plumwood 1993: 4). Insofar as the current catastrophic social-ecological condition is a material result of this mode of knowing and enacting the world, it compromises the modern world and world-making project ecologically as much as onto-epistemologically. To put it in the words of the

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materialisms and the ontological turn in social theory in particular have engendered a sociological reckoning with radically relational understandings of nature and society or culture (see e.g. Pellizzoni 2016; Folkers 2020; Engert/Schürkmann 2021; Lemke 2021; Schürkmann 2021; Barla 2023; Hoppe 2024; Silberzahn 2024; see also Kropp/Sonnberger 2025: 60–76).

Colombian-American decolonial anthropologist Arturo Escobar, the Anthropocene – or rather the social-ecological predicament that this term so insufficiently encapsulates – is an “environmental-cum-ontological conflict” (Escobar 2020: xxxi).

Thus understood, the social-ecological devastations and challenges of the present urge academic knowledge production to change the *terms* rather than merely the *content* of the conversation about the ecological crises facing the world (Mignolo 2011: 122–123; 2018: 143–144; see also von Verschuer/Hartmann/Barla 2023). In order to achieve a comprehensive sociological understanding of the current social-ecological condition, it is essential to attend to how ways of knowing and being in the world are implicated in destructive modes of social-ecological world-making. This applies particularly to a sociology pursuing both an empirical-analytical and a critical-transformative approach, as much contemporary environmental sociology (including my own) does. In order to do so, an inter- and transdisciplinary opening towards other bodies of knowledge besides the natural sciences is crucial. It is not only the natural and the social sciences that can enrich one another in their engagement with the social-ecological conditions, transformations, and challenges of the past, present, and future. Thinking beyond disciplinary boundaries within the domain of the social sciences and humanities, thinking with anthropology, political ecology, feminist materialisms and technoscience studies, decolonial thought, and Indigenous scholarship holds just as much potential for environmental sociology and sociology more generally for mutual inspiration and learning.

In the world-historical timespace that concepts such as the Anthropocene, the Capitalocene or the Chthulucene circumscribe, in which it appears to be the world itself that is at stake, it is crucial to carefully scrutinise what world we are talking about. Something that is emphasised in all bodies of knowledge I have woven into my exploration of the world/ings of agrobiodiversity conservation is that “the world” is not an ahistorically given entity to be known and used. Instead, as I have shown throughout this book, what the world is comes to matter – for better or for worse – in emergent and indeterminate ways and in (sometimes unexpected) more-than-human relations and collaborations. Acknowledging the diversity of ways of knowing, being in, and enacting the world – the diversity of modes of worlding – and creating arenas where world(ing)s meet holds the potential, to borrow the words of my interview partner Alejandro Argumedo once more, of cultivating relations of “mutually beneficial cross-fertilisation of ideas and experiences” (see chapter 4.2). It is, in other words, an opportunity for and crucial step towards cultivating less destructive worlds.