2. Heritage Practices as Future Making Practices

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Introduction

What does it mean to speak of heritage practices as "worlding" or "future making" practices? While it is conventional to think about heritage as a series of practical fields oriented towards preserving and managing what remains of biological and cultural diversity from the *past*, it is perhaps less often the case that we reflect on the role of heritage in assembling and making *futures,* despite ubiquitous claims that the aim of such procedures is the preservation of objects, places and practices *for future generations*. If we begin to probe seriously these future orientations, then it becomes possible to think of heritage as a series of activities which are intimately concerned with *assembling*, *building* and *designing* future worlds. In this chapter, I focus empirically on crop diversity conservation practices and the work of the Svalbard Global Seed Vault (SGSV), as an example of the ways in which heritage practices might be productively reframed as "worlding" or "future making" practices, and how such a framework might suggest productive new lines of enquiry for critical heritage studies more generally.

What are "futures" and how are they "made"?

The "future" has a long history as a concept in both the popular and scientific imaginary (e.g. Jameson 2007), and is part of the same modern set of concepts which undergirds contemporary

understandings of heritage (e.g. Harrison 2013a). And yet the sudden deluge of scholarly publication relating to futures would suggest that it is having a bit of a "moment". This is perhaps no-where more apparent than in the fields of anthropology and design studies, where the meeting of these two disciplines has received significant recent attention (e.g. Ehn, Nilsson and Topgaard 2014; Smith et al 2016). As the late John Urry notes in his recent synthetic review of future studies in the social sciences, particular futures tend to be produced by the same anticipatory systems which have been built to plan for and predict them (2016: 9; see also Law and Urry 2004). This is not only because the power to realise certain futures is unequally distributed and prioritises those futures which benefit certain powerful actors and institutions, but also because specific planning and management systems themselves enact and produce specific futures.

To speak of "futures" in the plural, as "enacted" and "made", seems to contradict the idea of the future as a "reality"; a specific temporal and spatial zone of material and social experience. Here we confront a central problematic of the contemporary social sciences – how can we speak of something as simultaneously "real" and also "constructed"? And how can we talk about *multiple* real, co-existent constructed realities? The work of Michel Callon and Fabien Muniesa (e.g. Callon 1993, 2005; Callon and Muniesa 2005; Muniesa 2014; Muniesa and Callon 2007), which examines the ways in which the economy is simultaneously real and produced by the intervention of the same economists who claim to observe it (see also Hertz 2000), addresses this question directly. As Muniesa notes:

> …reality is indeed constructed, but it is so in the engineer's sense: the scientific fact stands objectively in the laboratory as the bridge stands firmly over the water, that is, insofar as it undergoes a laborious process of material assemblage. But that is not, alas, quite a common view. For constructivism to mean realism it has first to emancipate from the idea of 'social construction' that is often found in the social sciences and according to which reality would be located not in things but in what we think of them. And for realism to mean constructivism it has to avoid the temptation of considering reality as something that just stands there without taking the trouble to happen (Muniesa 2014: 32)

Perhaps the most important finding to emerge from the history and sociology of the natural and social sciences over the past decades is that *observation* is always itself a form of *intervention* (e.g. see Barad 2007; Daston and Galison 2010 Latour 1987, 2013; Stengers 2000). My reference to the example of the economy here is not arbitrary—this is the very context in which "futures" are "traded", and in doing so, *assembled* and *produced* (see also Urry 2016: 8). And like the economy, heritage is defined by its management practices, practices which are intended to identify, define and secure the existence of its conservation object into the future, and which thus intervene in, and contribute directly to, the assembling of specific future worlds (see also Harrison 2017, Breithoff and Harrison 2018, Breithoff and Harrison 2020, Harrison and Sterling 2020).

Heritage: assembling, building and designing future worlds

Recent approaches to heritage studies have drawn on assemblage and actor-network approaches to show the value of seeing heritage as a series of strategic socio-technical and/or bio-political assemblages composed of various people, institutions, apparatuses (*dispositifs*) and the relations between them (e.g. Macdonald 2009; Harrison 2013a; 2013b; Bennett et al 2017). Thinking of heritage in this way not only helps us to understand how it operates at the level of both material and social relations, but also helps us to focus our attention on the particular constellation of

power/knowledge effects that it facilitates, that is, the relationship between heritage and governmentality (see also Smith 2006).

Jane Bennett's (2010) discussion of assemblage theory shows how human and non-human agents of change cannot be separated from the ways in which they are arranged and the affordances of the various socio-technical assemblages in which they are entangled. Thinking of heritage as an assemblage (or *agencement*) means paying attention not only to individuals and corporations and the discourses they promulgate or resist, but also to the specific arrangements of materials, equipment, texts and technologies, both "ancient" and "modern", by which heritage is produced in conversation with them. These specific arrangements of materials might include not only the "historic" fabric of a heritage site itself, along with the assortment of artefacts and "scars" that represent its patina of age and authenticity, but also the various technologies of tourism and display by which it is exhibited and made "visitable" (c.f. Dicks 2004) as a heritage site. We might think of the governmental capacities of these various socio-technical components, which together make up the heritage agencement, in relation to the concept of an apparatus or *dispositif*, as developed by Michel Foucault in his work on governmentality.

Paul Rabinow (2003: 49ff) has shown how Michel Foucault defined an apparatus as a device or technology that specifies (and hence helps to create) a subject so that it might control, distribute and/or manage it. Agamben further defines an apparatus as "anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviours, opinions, or discourses of living beings" (2009: 14) (and indeed, the system of relations between them). We might think here of the governmental capacities of the various modern and historic material interventions at heritage sites – conservation methods and equipment, crowd-controlling devices, infrastructure associated with movement around a site, the various interpretive appliances that have been introduced alongside the affordances of the material that forms the heritage site itself, and the texts and discourses that give each of them their authority to control behaviour in specific ways. These devices and texts are arranged and assembled in precise and identifiable ways, the study of which allows their capacity to control and regulate behaviour, and the various networks of agency in which they are distributed, to be better understood.

So what is the "world making" work of heritage? Elsewhere I have shown how heritage registers and lists of many different forms might be seen to act "at a distance" to direct and constrain the management of both intangible and tangible forms of cultural heritage (see Harrison 2016). One of the key outcomes of heritage practices is the material and semiotic transformation of ruined and redundant objects, places and practices in a process by which they are given a "second life" (c.f. Kirshenblatt-Gimblett 1998, 2006). But this transformation is not only discursive. The work of heritage transforms not only the objects themselves (by way of conservation processes for example which may chemically or physically alter and transform the object into a piece of "heritage") but also the landscapes in which they are situated. We tend to think of heritage as something which is pre-existing and thus incorporated passively into the design of rural and urban landscapes, but the decision to conserve and incorporate what had previously existed as merely a "ruin" into a new development and to label it as "heritage" is one which transforms the material world in particular ways. What I mean here is that a decision to build "around", "within", "above" or "below" is also a decision to build "with" something—an archaeological site, part of a ruined

building, a former factory—and this is also a process of creating something new out of fragments (see also Shanks 2012).

In thinking of heritage as an assemblage, we are forced to dissolve the boundaries between that which is "old" and that which is "new" to consider each as part of the physical infrastructure which constitutes a piece of "heritage" (see Harrison 2013c). In this sense, we need to look beyond the remains of the heritage sites themselves which are conserved, to simultaneously consider the vast material infrastructure relating to conservation and visitor management and the production of the heritage "experience" which work together to "create" the heritage site. We might think of these as the "technologies" of heritage—the various mechanisms and apparatuses by which the heritage experience is created. At the same time as this increasing mechanization of the technologies of heritage, we are seeing a vast global increase in the number of places which are classified and managed as heritage sites (Harrison 2013a). Even in the case of natural and so-called "intangible" heritage, these landscapes and cultural practices are increasingly being linked to sites of consumption (and their associated technologies of heritage experience) where they are staged and reframed for exhibition and consumption. The globalization and expansion of particular definitions of heritage throughout the twentieth and early twenty-first century have had important material implications which have rarely been considered alongside their discursive consequences. However, both are equally important and work together in intervening within, transforming and making future worlds.

Towards an ecology of heritage practices

If we are to see heritage practices of various kinds as enacting new realities through contingent practices of assembling and reassembling bodies, techniques, technologies, materials, values, temporalities and spaces in particular ways, what does it mean to speak of "futures", "realities" and "worlds" in the plural?

> This is how I produced what I would call my first step towards an ecology of practice, the demand that no practice be defined as 'like any other', just as no living species is like any other. Approaching a practice then means approaching it as it diverges, that is, feeling its borders, experimenting with the questions which practitioners may accept as relevant, even if they are not their own questions, rather than posing insulting questions that would lead them to mobilise and transform the border into a defence against their outside (Stengers 2005: 184).

Invoking Isabelle Stenger's notion of ecologies of practices, I want to draw attention to the relative *autonomy* of different domains of heritage practices, with each of these domains specifying *particular* objects of conservation and *specific* accompanying methods of management. Examples of such domains include the fields of biodiversity conservation, built heritage conservation, and endangered language preservation, each of which identifies a specific risk (respectively, loss of biological diversity, loss of cultural patrimony and loss of language and "culture") and an endangered object ("biodiversity," "built heritage," and "language diversity"). Each of these domains applies its own specific techniques for identifying, collecting, conserving, and managing the endangered object and the factors that are perceived to threaten it (see Harrison 2015; see also Vidal and Dias 2016). In so far as heritage is generally tasked with preserving its endangered object for the "future," and each of these domains is concerned with establishing its respective conservation targets as both objects of knowledge and fields of intervention, these different

heritage domains can be said to be actively engaged in the work of assembling and caring for the future. Central here is a plural notion of heritage ontologies-understood as the world making, future assembling capacities of heritage practices of different kinds, and the ways in which different heritage practices might be seen to enact different realities and hence to assemble radically different futures (Harrison 2015; see also Holtorf and Högberg 2015). I will explore these different future making practices by looking in detail at the futures which are generated in the work of the Svalbard Global Seed Vault (SGSV) and considering how these might diverge from other fields of heritage practices.

The Svalbard Global Seed Vault (SGSV)

Established in 2008 in partnership between the Royal Norwegian Ministry of Agriculture and Food; the Global Crop Diversity Trust (GCDT), an independent international organisation based in Germany (which was itself established as a partnership between the United Nations Food and Agriculture Organization (FAO) and the Consultative Group on International Agricultural Research (CGIAR)); and the Nordic Genetic Resource Centre (NordGen), SGSV is currently the world's largest secure seed storage facility. At a cost of US$9million to the Norwegian government, the construction of the SGV began in 2005 as a result of the recommendations of the 2004 International Treaty on Plant Genetic Resources for Food and Agriculture, which created a global ex-situ system for the conservation of agricultural plant genetic resource diversity. Situated on the remote island of Spitsbergen in the Norwegian Svalbard archipelago, high in the Arctic north, it received its first deposits of seeds in 2008. Nordgen, which is responsible for the day to day operations of the facility and maintains its public database of samples, reports that (at the time of writing) it holds approximately 850 thousand "accessions" and 54.7 million seeds from 233 countries and 69 depositor institutes in its frozen repository (Nordgen 2017). Each accession represents an individual crop phenotype and is usually made up of approximately 500 individual seeds. The seed accessions are dried by depositing institutions to limit their moisture content to 5-6% and are then sealed inside an individual airtight aluminium bag. These bags are packed into standard sized crates and stacked on shelving racks within one of the three separate, identical storage vaults, each measuring approximately 9.5 x 27 meters, which are refrigerated to maintain a constant temperature of -18 degrees Celsius (Figure 1). These vaults have been excavated approximately 120 metres into the side of a sandstone mountain at a height of 130 meters above sea level; entry to the vaults is via a 100-metre entrance tunnel (Figure 2). Equal parts bunker and frozen "ark", its dramatic façade (Figure 3) includes a commissioned artwork, Perpetual Repercussion by Dyveke Sanne, which "renders the building visible from far off both day and night, using highly reflective stainless steel triangles of various sizes" (Government of Norway 2015). Cold climate and permafrost ensure that even if power is lost, the storage vaults would remain frozen for a significant period of time, even taking into account the possible effects of climate and sea level changes. "Designed for [a] virtually infinite lifetime", it is perceived to be "robustly secured against external hazards and climate change effects" (Government of Norway 2015).

Figure 1

Figure 2

Figure 3

The SGSV is not a conventional seedbank, but was conceived as part of a global system to facilitate the secure storage of a duplicate "back up" of seeds from national and regional repositories. "Worldwide, more than 1,700 genebanks hold collections of food crops for safekeeping, yet many of these are vulnerable, exposed not only to natural catastrophes and war, but also to avoidable disasters, such as lack of funding or poor management. Something as mundane as a poorly functioning freezer can ruin an entire collection. And the loss of a crop variety is as irreversible as the extinction of a dinosaur, animal or any form of life" (Crop Trust 2016a).

These backed up copies of seeds are stored free of charge, and are held as part of an international agreement in which the seeds remain the property of the depositing institution and are available for withdrawal by the depositing institution (and only that depositing institution) at any time. It is thus not an active genebank, but a literal "vault" containing a secure stock of duplicate seeds which can be used if seed stocks from the depositing institution become depleted or lost. The requirement for such a facility seemed to be clearly demonstrated when, in September 2015, scientists from the International Centre for Agricultural Research in Dry Areas (ICARDA) who had lost access to their genebank facility in Aleppo, Syria, requested the return of duplicate samples of seed which had been sent to the SGSV to reconstruct their collection in a new facility in Lebanon. This first withdrawal of seed samples from the SGSV as a result of the ongoing conflict in Syria was reported widely in the media and seemed to indicate clearly that the SGSV was already fulfilling a purpose which it had previously been assumed would arise in a more distant future, justifying the significant investment in this global "insurance policy". The manager of the new genebank facility in Terbol, Bekaa was reported to have said of the withdrawal of seed samples "It [SGSV] was not expected to be opened for 150 or 200 years ... It would only open in the case of major crises but then we soon discovered that, with this crisis at a country level, we needed to open it" (Alabaster 2015).

Banking diversity, making futures, securing hope

In articulating the need for such a repository, the SGSV's mission is framed within what we might see as a fairly conventional articulation of the endangerment sensibility (c.f. Vidal and Dias 2016) and its accompanying entropic view of the relationship between diversity and time (see further discussion in Harrison, in press). The GCDT, as the charitable organisation responsible for funding the ongoing operations of the SGSV and the preparation and shipment of seed from developing countries, perhaps articulates this most clearly in its explanation of the SGSV's purpose. "The purpose of the Svalbard Global Seed Vault is to provide insurance against both incremental and catastrophic loss of crop diversity held in traditional seed banks around the world. The Seed Vault offers "fail-safe" protection for one of the most important natural resources on earth." It continues, "Crop diversity is the resource to which plant breeders must turn to develop varieties that can withstand pests, diseases, and remain productive in the face of changing climates. It will therefore underpin the world food supply…the Seed Vault will ensure that unique diversity held in genebanks in developing countries is not lost forever if an accident occurs" (Crop Trust 2016b). In these statements, we see all of the conventional articulations of an entropic view of the

relationship between diversity, including the potential loss of diversity through catastrophic incidents and the need to build resilience in the face of such changes.

However, the situation becomes somewhat more complicated when we consider the operation of the SGSV in relation to the global system of crop diversity conservation and in particular, the relationship of the materials stored in the SGSV to the specific conservation targets of crop diversity conservation practices. As Sara Peres (2016) shows, seed banks were developed as part of a strategy to ensure the maintenance of crop genetic diversity as a result of the widespread adoption of a small number of high yielding crop monocultures during the course of the twentieth century. This was itself an outcome of the industrialisation and modernisation of global agricultural crop production over this same period. The freezing of seeds would enable the maintenance of crop diversity without the need for ongoing cultivation of old crop varieties, resulting in an "archive" of the evolutionary histories of crop varieties which might be of use to future generations of agricultural scientists and farmers. Nikolai Valilov's important work in the first part of the twentieth century on the concepts of "centres of origin" and "genetic erosion" underpin this system. He suggested that both wild and domesticate genetic diversity was fundamental to food security. "Landraces", as localised genetic variants of crop species which are the result of both cultural and natural selection processes, were seen to represent a bank of genetic diversity which held potential for future crop improvement to mediate the effects of future climate change and to assist with the development of new crops which are resilient to the possible emergent future diseases (e.g. see discussion in Hummer 2015). Peres (2016) notes that the present system of genebanks is the outcome of debates in the 1960s and 1970s surrounding the most appropriate methods of crop diversity conservation—in situ or ex situ—in which the frozen seeds held in seedbanks across the world have come to act as "proxies" for crops. These debates were closely related to, and indeed stimulated, the development of broader technologies of cryogenic and other frozen preservation across a large number of different fields of conservation (see Radin 2016, 2017; chapters in Radin and Kowal 2017). As objects which naturally store genetic records, the seeds would facilitate future retrieval of the histories of local agricultural experimentation and selection present in landraces and other cultivars, alongside the genetic diversity of wild crop seed. Holding these seeds at low temperatures would potentially halt the genetic erosion which might occur in situ through a combination of natural and cultural processes, thus providing a frozen archive of genetic material which could be "recalled" in the future (see also Bowker 2005).

> Seed banks can therefore be imagined as repositories that enabled the 'recall' of genetic diversity, both by committing it to memory and by allowing it to be recovered from cold storage for use. By evoking both these meanings, the concept of recall conveys how the conservation of old landraces is entangled with concerns regarding their future use. Seed banks thus function as archives that make records of the past of crops accessible in the future (Peres 2016:102).

This view of seedbanks as archives of past natural and cultural processes is significant in motivating the work of the SGSV. The seeds hold within their genetic material records of localised crop experimentation and natural and cultural selection which archive histories of agricultural activity which extend back in time to ancient Mesopotamia. In relation to the ICARDA accession withdrawal, the genebank manager was again quoted as saying "When you trace back the history of these seeds, [you think of] the tradition and the heritage that they captured […] They were maintained by local farmers from generation to generation, from father to son and then all the way to ICARDA's gene bank and from there to the Global Seed Vault in Svalbard" (Alabaster 2015).

In freezing crop seeds as archives which map global genetic diversity from different points in time, each of which contains echoes or fragments of the diversity of past natural and cultural processes, the SGSV intervenes in the normative, entropic decay of diversity, "banking" a record of past genetic diversity in frozen, arrested time. Thus, in conjunction with ongoing processes of in situ crop diversity maintenance, themselves subject to continuing processes of natural and cultural selection which alter contemporary global crop diversity, the vault's collection reverses the entropic process of diversity decay by increasing crop genetic diversity. In this sense the values of its collection also increase with time. Its role in securing and making futures is articulated clearly by GCDT. "The Vault is the ultimate insurance policy for the world's food supply, offering options for future generations to overcome the challenges of climate change and population growth. It will secure, for centuries, millions of seeds representing every important crop variety available in the world today. It is the final back up" (Crop Trust 2016a).

It is perhaps no coincidence that the conservation target of such activity is the seed. It acts here both as a physical container for genetic material but also a poignant symbol of latent potential and hope in securing uncertain futures by intervening directly in "natural" processes of entropic diversity decay, offering "options" to future generations in responding to climate and population change by providing "fail-safe" protection for "one of the most important natural resources on earth" (Crop Trust 2016b). In doing so, the seed appears as a silent witness to political processes, its strength and resilience a result of its apolitical internationalism, just like the global system of which it has become a part.

> The power of seed can be explosive. Not just because it can force its way through rock-hard soil to reach the sunlight, but also because it is at the centre of many political processes. The rights relating to the genetic material of plants, animals and micro-organisms have been a key issue of contention between industrial and developing countries (Statsbygg 2008: 8)

Ghassan Hage's (2003) analysis of the state's capacity to distribute hope as a form of governmental power is significant in pointing to the ways in which, in offering a sense of hope and security against uncertain global futures, banking crop diversity is also a practice which is caught up in processes of the generation and differential distribution of forms of power. The biopolitical concerns articulated in these processes contribute to the management of heritage risk (see Rico 2015) and future uncertainty by establishing certain frameworks for intervening in, and shaping that future through the maintenance and development of a "bank" of genetic materials which might form the basis for future crop experimentation, and thus future forms of life. While the global system of which the SGSV is a part is one in which there are significant regulatory frameworks for the sharing of plant genetic resources for food and agriculture, it is nonetheless one in which the authority to determine access to those resources is vested in national governments. It seems significant then that the SGSV, due to prohibitions under Norwegian law on the import of and research on genetically modified organisms, cannot store genetically modified seeds, whilst at the same time contributing to a system which might facilitate such research elsewhere.

On heritage practices and their multiple divergent futures: discussion and conclusion

In looking at the work of the SGSV as a form of future making, I have been keen to emphasise the extent to which its specific material and temporal practices are oriented towards the production

of a distinctive future. This future is not a generic outcome of heritage or even biodiversity conservation, but arises from the specific material and discursive practices which are enacted in the work of this global crop diversity conservation programme—*specific* practices which work with *particular* materials, gathering together *specific* human and nonhuman agents in a *precise* time and at a *particular* place. Quite different futures emerge from the work of other conservation agencies and practices—futures which may diverge significantly, or even oppose, those future worlds which are made within the operations of the SGSV.

An example of the rise and fall of practices oriented towards the assembling of one such alternative future world could be inferred from Nesbitt and Cornish's (2016; see also Drayton 2000, Endersby 2008) analysis of the Economic Botany Collection at Kew. Like the SGSV it also contains seeds, amongst other potentially economically "useful" plant materials. Its development, like the botanical and ethnographic collections between which its "biocultural" (see also Salick, Konchar and Nesbitt 2014) assemblages ultimately came to be divided, is closely linked to the history of (in this case, the British) Empire, in moments when it seemed that the world could be collected, assembled, ordered and governed at a distance and in miniature through such institutions (see also Bennett et al. 2017). For a time, its collections blended together unmodified plant materials with objects of manufacture and craft from across the British Empire as part of the production of a world which was ordered and valued according to its latency and potential for human exploitation. The widespread closure and dispersal of Economic Botany Collections during the 1960s-1980s coincides historically with the development and emergence of the concept of "biodiversity" (Takacs 1996) and reflects changing notions of "nature" and "culture" in which plant species came to be increasingly viewed as having forms of "existence" value which were independent from their potential usefulness to humans (e.g. Calicott 1986) and "ethnographic" collections increasingly reconfigured (more or less) non-hierarchically as museums of world cultures. These reorganisations of collections reflect, and at the same time helped produce, new worlds with new potentialities and divergent latent futures.

What actions might flow from this recognition that certain heritage domains build their own distinctive worlds and their own particular futures? I would argue that it is only in taking a comparative approach to understanding specific fields of heritage practices that we might reflect on, and explore the possibilities inherent in reaching across these different fields of practice to work towards the assembling of common or shared futures. By reframing heritage as future-making practice—and rethinking the relationships between these various modes of future making or worlding practices—I suggest that these various practices of assembling and caring for the future might be creatively redeployed to generate innovation, foster resilience, encourage sustainability and facilitate the building of "common worlds" (Latour 2014) between and across them. As Arjun Appadurai (2013: 3) has recently noted, "the future is ours to design, if we are attuned to the right risks, the right speculations, and the right understanding of the material world we both inherit and shape". It is only in developing a shared and comprehensive understanding of the ways in which current speculations regarding what (and how) to conserve in the present actively shapes our material, ecological and social futures that we will be able actively and consciously to do so.

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List of images, with captions

Figure 1: Interior of the central of three storage vaults at SGSV showing standardised storage crates on shelving units. Each box is individually bar coded and registered on the SGSV database. Currently only this one of the three vaults is in use. The SGSV has the capacity to store 4.5 million seed samples or 2.25 billion seeds, which would account for over double the world's current estimated crop diversity held in the existing system of regional, national and international seedbanks. Photograph by the author.

Figure 2: The "Svalbard tube"— the long entrance tunnel leading from the external concrete portal building into the mountainside to the three identical vaults. The insulated (heated) service building, containing foyer, office and toilet facilities, is visible in the foreground of the photograph. Photograph by the author.

Figure 3: The SGSV's dramatic concrete portal building and façade, including the artwork, *Perpetual Repercussion* by Dyveke Sanne, commissioned and produced by Public Art Norway (KORO). The access tunnel and the vault itself are located entirely within drill and blast excavated sandstone within the mountain. Photograph by the author.