

History as a boundary object: historiographical reasoning and the politics of climate future

 /tempoeargumento

 @tempoeargumento

 @tempoeargumento

 Sjamme van de Voort
Vrije Universiteit Amsterdam
Amsterdam – The Netherlands
s.h.j.van.de.voort@vu.nl
 orcid.org/0000-0003-0550-9503

Editores Responsáveis (Convidados):

Claiton Marcio da Silva
Universidade Federal da Fronteira Sul
orcid.org/0000-0002-4582-4586

André Secchieri Bailão
Fundação Oswaldo Cruz
orcid.org/0000-0003-1577-3375

William San Martín
Worcester Polytechnic Institute - EUA
orcid.org/0000-0003-2457-372X

 <http://dx.doi.org/10.5965/2175180318472026e0102>

Recebido: 31/01/2026
Aprovado: 21/07/2026

History as a boundary object: historiographical reasoning and the politics of climate future

Resumo

This article examines how historical reasoning shapes the imagination of climate futures by comparing two interventions: an institutional adaptation-pathways exercise developed for the Dutch Cultural Heritage Agency and participatory workshops conducted within the transnational Soy Stories project in Brazil and the Netherlands. While both address climate uncertainty, they mobilize history in markedly different ways. The adaptation-pathways approach made relocation, selective preservation, documentation and planned loss available for institutional discussion, but did so through an expert-led planning format that organized futures through linear sequencing, preservation-oriented categories and institutional assumptions about value and responsibility. By contrast, the workshops introduced historical narratives at the outset as a methodological provocation, treating history as a boundary object through which participants co-produced alternative futures rooted in plural memories, multispecies relations and situated experiences of environmental change. Drawing on environmental history, memory studies and critical heritage scholarship, the article conceptualizes this second approach as a historiographical intervention: a practice that reconfigures how pasts, presents and futures are related in climate adaptation debates. Comparative analysis shows that introducing history as a generative rather than contextual element expands imaginable futures, redistributes narrative authority and exposes normative assumptions embedded in institutional planning tools. The article argues that climate adaptation is not solely a technical challenge but also a historiographical problem requiring more reflexive, plural and socially grounded forms of future-making under climate crisis.

Keywords: climate adaptation; historiography; cultural memory; heritage studies; future imaginaries.

História como objeto de fronteira: raciocínio historiográfico e a política do futuro climático

Resumo

Este artigo examina como o raciocínio histórico molda a imaginação de futuros climáticos ao comparar duas intervenções: um exercício institucional de trajetórias de adaptação desenvolvido para a Agência do Patrimônio Cultural dos Países Baixos e oficinas participativas realizadas no projeto transnacional Soy Stories, no Brasil e nos Países Baixos. Embora ambas enfrentem a incerteza climática, mobilizam a história de maneiras bastante distintas. A abordagem de trajetórias de adaptação tornou discutíveis institucionalmente opções como realocação, preservação seletiva, documentação e perda planejada, mas o fez por meio de um formato de planejamento conduzido por especialistas, que organizava futuros segundo sequências lineares, categorias orientadas à preservação e pressupostos institucionais sobre valor e responsabilidade. Em contraste, as oficinas introduziram narrativas históricas desde o início como provocação metodológica, tratando a história como objeto de fronteira por meio do qual participantes cocriaram futuros alternativos enraizados em memórias plurais, relações multiespécies e experiências

situadas de mudança ambiental. Com base em história ambiental, estudos da memória e estudos críticos do patrimônio, o artigo conceitua essa segunda abordagem como intervenção historiográfica: uma prática que reconfigura como passados, presentes e futuros se articulam nos debates sobre adaptação climática. A análise comparativa mostra que introduzir a história como elemento gerador amplia futuros imagináveis, redistribui autoridade narrativa e expõe pressupostos normativos embutidos em ferramentas institucionais de planejamento. O artigo argumenta que adaptação climática é também um problema historiográfico.

Palavras-Chave: adaptação climática; historiografia; memória cultural; estudos do patrimônio; imaginários do futuro.

Introduction: climate crises as a historiographical problem

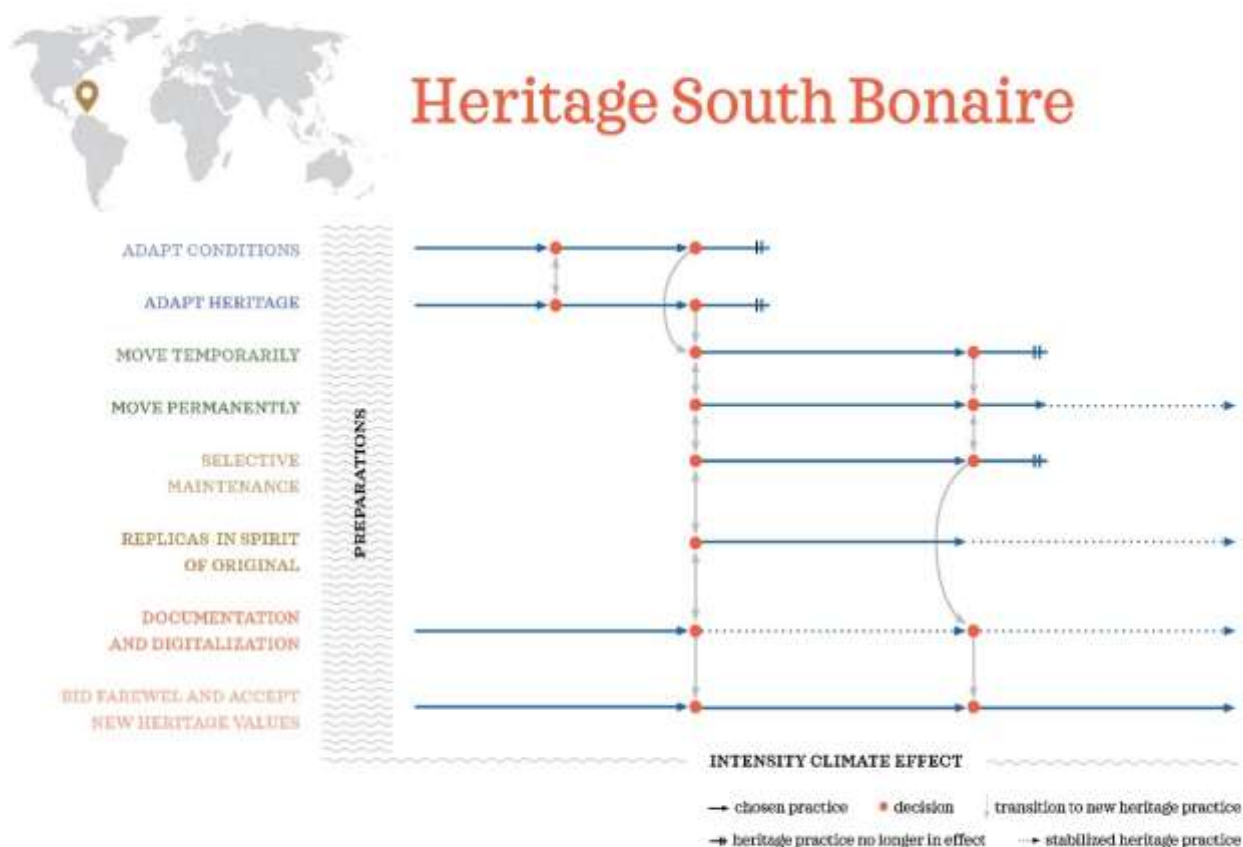
This article examines what histories of climate change can do in the present: how historical reasoning shapes the imagination of climate futures. Climate crises increasingly reorganize how societies perceive, negotiate, and remember environmental change. Extreme events—floods, droughts, and sea-level rise—are no longer exceptional disturbances but ongoing conditions that restructure how communities understand both their pasts and their possible futures (Harvey; Perry, 2015; Priebe; Mårald; Nordin, 2021; Tsing; Bubandt; Gan; Swanson, 2017). As the Call for Papers for this special issue notes, contemporary climate disruptions make climate not only a scientific or political challenge but also a cultural and historiographical one, demanding attention to the narratives and memories that different groups mobilize when conceptualizing environmental change across time and place and changing how we write, and, ultimately, think about history. This article asks what kind of methodological practice becomes possible when two contrasting responses to climate crisis from people working with the past—an institutional adaptation-pathways exercise and participatory workshops that use history as a boundary object—are read together. Both emerge from histories situated in different places yet entangled in shared, large-scale processes that resemble hyperobjects: diffuse phenomena with no clear presence in any spatial or temporal present (Morton, 2013). Here, the article draws on my intervention in two such histories: first, an institutional heritage-adaptation workshop conducted with the Dutch Cultural Heritage Agency (RCE), where adaptation-pathways methodologies were applied to eight climate-threatened heritage cases; and second, the transnational histories of soy-related

sustainability crises across Brazil and the Netherlands, whose intertwined agricultural, ecological, and socio-economic transformations continue to shape how communities imagine the futures available to them. Although rooted in distinct geographical and political contexts, both cases reveal how present-day climate imaginaries remain structured by inherited infrastructures, narrative traditions, and long-standing patterns of environmental change. Though distinct, these histories are entangled through the Anthropocene-scale processes that have produced today's climate emergencies and the imaginaries through which societies respond to them. By tracing how each intervention negotiates uncertainty, scale, and narrative, the article explores how historical thinking might support the imagination of more sustainable futures, ultimately taking up van der Vleuten and de Hoop's call for historically grounded, future-oriented methodologies (Van Der Vleuten; De Hoop, 2025) by showing how the second, participatory workshop reorganises the RCE exercise into a more reflexive, historically attentive practice that enacts what we term a historiographical intervention (Van De Voort; Kreysel; Andrioli; Cruz *et al.*, [2027]).

Within the shifting landscape of climate change, cultural heritage institutions increasingly find themselves on the frontline of climate adaptation. In doing so, they actively shape what kinds of futures become imaginable, guided by a dominant, heritage-based historiographical framework that defines what elements count as "heritage" and how they should be treated (Harrison; Desilvey; Holtorf; Macdonald, 2020). The Dutch Cultural Heritage Agency (RCE), confronted with accelerating climatic threats, undertook a strategic exploration to understand how extreme climate scenarios—compound flooding, unprecedented drought, wildfires, multi-meter sea-level rise—might affect heritage sites across the Netherlands and the Caribbean territories of the Dutch Kingdom. Across cases ranging from Radio Kootwijk and Schokland to Batavialand, Bonaire and the Wadden Sea, together with heritage scholar Eveline de Smalen, I was commissioned by the RCE to develop heritage adaptation pathways as a policy tool to guide decision-making under uncertainty. Based on interviews with experts in the various heritage cases that we chose, these pathways map sequences of potential actions over time, revealing when certain protective measures become

ineffective and when more radical transformations—temporary relocation, selective preservation, replication, or even planned loss—become unavoidable (De Smalen; Van De Voort; 2025; Haasnoot; Di Fant; Kwakkel; Lawrence, 2024). The value of this RCE process lay in making difficult heritage futures—relocation, selective preservation, replication, and planned loss—available for institutional discussion. The critique developed here concerns the temporal and epistemic architecture through which those possibilities were organised. As figure 1 shows, the resulting pathways represented sequences of possible adaptation strategies and the transfer points at which one strategy might give way to another.

Figure 1 – Adaptation pathway for Heritage South Bonaire



Source: Adapted by the author in collaboration with Eveline de Smalen (2026).¹

¹ Key: horizontal lines indicate possible adaptation strategies; red dots indicate transfer points between strategies; arrows indicate continued feasibility under increasing climate effects.

As a response to climate pressure on heritage, the RCE project illuminates how Dutch government institutions currently try to stabilize futures in the face of escalating risk. Yet the work also exposes the epistemic and normative assumptions embedded in adaptation planning: the linear temporalities, the preference for material preservation, and the implicit hierarchy of whose knowledge counts as legitimate. Such assumptions are hardly neutral; they shape what kinds of climate futures are imaginable and which forms of heritage—and therefore which histories and implicit futures—are allowed to endure (Desilvey, 2017; May; Holtorf, 2020b).

These normative assumptions within adaptation planning—its linear temporalities, its preservation-first logic, and its implicit hierarchies of knowledge—become even more visible when set against the longer arc of Dutch climate adaptation history. It is crucial to understand that the Netherlands has long imagined its future through a particular historical narrative of control, defence, and engineering ingenuity in the face of the danger presented by sea and river flooding, which became overarching government policy for after the *Watersnoodramp* of 1953: a catastrophic storm surge that breached dikes in multiple places, flooding vast areas of the *southwestern* provinces. The devastation was profound—whole villages submerged, thousands displaced or killed—and it became a defining national trauma. The state's response was the *Deltawerken*, a vast infrastructural project that took more than three decades to complete. As a national symbol, the *Deltawerken* became a foundational element in the Dutch historical and spatial imaginary: a narrative of mastery over water, of technological sovereignty, of a nation that believed it could secure futures by building ever-stronger defences (Dijstelbloem; Toom; De Vries, 2024; Petersen; Bloemen, 2015).

This narrative matters today because the RCE adaptation pathways seem to emerge directly out of that same infrastructural and historiographical tradition. The institutional expectation that futures can be made safe through planning, modelling, and infrastructural foresight is grounded in a mid-20th-century experience where such efforts did, in fact, deliver security. Yet, as sea-level rise accelerates, the very premise of that narrative is destabilizing. The *Deltawerken*

were a response to a single historical shock to the Netherlands; contemporary climate change confronts us with a fundamentally different challenge—nonlinear, uncertain, continuous.

In parallel with this work within the institutional framework of the RCE, the Soy Stories project—a transnational, transdisciplinary research collaboration between the Eindhoven University of Technology’s History Lab, the Vrije Universiteit Amsterdam’s Athena Institute, and the Universidade Federal da Fronteira Sul’s Soy Observatory—was developed with a parallel but distinct aim: to understand how plural and connected sustainability histories shape, limit, or expand what different communities imagine as viable futures in the context of soy-related crises, from the damage done by industrial monocultures in Brazil to the emission of dangerous levels of nitrogen in Dutch ecosystems (Van Der Vleuten; De Hoop; Broerse; Silva, 2022). Within the project, experimental workshops were developed to rethink how communities imagine climate-related futures. These workshops introduced “historiographical interventions”—deliberate, situated engagements with historical narratives designed to expand participants’ capacity to imagine futures otherwise (Van De Voort; De Hoop; Kreysel; Silva *et al.*, [2026?]; Van De Voort; Kreysel; Andrioli; Cruz *et al.* [2026?]). In a recent chapter, Evelien de Hoop and Erik van der Vleuten argue that in an era of interconnected socio-material-ecological crises, historians must develop transnational, transformative, and transdisciplinary approaches that actively engage with present controversies and the future imaginaries they produce. Historiographical interventions can become sites where historical knowledge, contemporary practices, and alternative futures “interact, collide, and co-produce new repertoires for action” (Van Der Vleuten; De Hoop, 2025).

Two workshops, in Rotterdam (NL) and Chapecó (BR), were designed to respond precisely to this call. Building on insights from the RCE adaptation pathways—especially the realisation that adaptation tools implicitly organise temporal and normative expectations. The workshops experimented with adding a historiographical layer by beginning with two short provocations: Caroline Kreysel’s account of the entangled histories of rivers and wetlands shaped by soy-related transformations across Brazil and the Netherlands, and Nathaly Yumi da

Silva's multispecies narrative tracing the more-than-human life of the brown stinkbug (Silva, [2026?]). Together, these interventions invited participants to consider how human and nonhuman histories intersect in shaping possible futures. These interventions shifted how participants conceived climate futures. Instead of defaulting to linear progressions or technocratic solutions, participants articulated futures grounded in historical injustice, more-than-human relations, community agency, and plural temporalities. In doing so, the workshops operationalised the very synergy that Erik and Evelien envision: transdisciplinary co-production, transformative engagement with contested presents, and attention to the situated, connected micro-histories shaping global environmental crises.

This article takes these two strands together—the institutional response represented by the RCE pathways and the experimental, community-oriented response embodied in the Rotterdam and Chapecó workshops—as an opportunity to reflect on what historiographical interventions can contribute to climate adaptation debates, and how history can be thought about and written. What is important to note here is that the memory and heritage studies perspective brought to this article emphasizes how identities and futures emerge from narrative negotiations between past and present (Van De Voort, 2021a; 2024; 2025). These insights further underscore why adaptation tools that ignore memory, narrative, and historical experience risk narrowing the very futures they aim to anticipate.

From this vantage point, the following question becomes guiding for this inquiry: How can historiographical interventions reshape the imagination of climate futures, and how might they address the normative and epistemic limitations revealed in current institutional approaches?

To answer this question, the article proceeds in four steps. First, it brings environmental history, memory studies, and critical heritage studies into dialogue with Erik and Evelien's proposal for transnational, transformative, transdisciplinary historiography. Second, it analyses the RCE adaptation pathways as a concrete expression of how heritage policymakers currently attempt to manage climate futures. Third, it examines the Rotterdam and Chapecó workshops as experiments

that respond directly to the call for historiographical interventions and shows how such interventions reconfigure participants' temporal, affective, and political imaginaries. Finally, the article argues for integrating historiographical interventions into (heritage) adaptation practice, not as an add-on but as a methodological commitment to plural pasts and plural futures. Importantly, this does not mean that participatory historiographical interventions can simply be scaled up by standardising their outputs. Their transformative potential lies precisely in their situatedness, interpretive openness, and capacity to hold conflict without forcing premature consensus. For policy practice, the relevant lesson is therefore not to convert workshop narratives into fixed planning categories, but to institutionalise moments in which such narratives can reshape the problem definition before pathways, thresholds, or adaptation options are formalised. Historiographical interventions could function as an upstream stage in adaptation planning: assembling plural memories, identifying inherited grievances and “roads not taken,” surfacing more-than-human relations, and testing whether institutional categories of value, risk, and loss are adequate to the worlds they seek to govern. In this form, they do not replace expert tools such as adaptation pathways, but interrupt and reorient them. Their policy relevance lies in making adaptation frameworks more reflexive, more accountable to situated histories, and less likely to reproduce the normative assumptions they inherit.

By weaving together institutional practice, experimental methodology, and historiographical theory, this article argues that thinking historically about futures in times of climate crisis—especially in the heritage domain—cannot rely solely on impact models or managerial tools. Instead, it must engage with the stories, memories, and histories through which communities orient themselves in time, negotiate loss, and imagine futures worth living.

Climate futures, memory, and historiographical intervention

Environmental history, memory studies, and critical heritage scholarship each provide different yet potentially complementary ways of understanding how societies make sense of climate disruption (Erll, 2024; Harrison; Desilvey; Holtorf; Macdonald, 2020). In various ways, they attend to long-term socio-material

changes, to how past events are remembered and mobilized, and to how institutions negotiate value and loss when futures become uncertain. These concerns resonate—loosely but suggestively—with Erik van der Vleuten and Evelien de Hoop’s proposal for a transnational, transformative, and transdisciplinary historiography, which calls for greater attentiveness to plural situated histories and to the performative, future-shaping dimensions of historical knowledge (Van Der Vleuten; De Hoop, 2025). Rather than offering a unified framework, these literatures together gesture toward a shared question: how do narratives, memories, and inherited infrastructures both anchor and unsettle our visions of what lies ahead, especially when traditional storylines feel stretched or inadequate?

The time these questions became palpable in my work was during my secondment to the RCE to work on the heritage adaptation pathways study (De Smalen; Van De Voort, 2025). Here, we worked within an established policy making paradigm in which pathways are understood as structured sequences of possible responses that can be activated under specified conditions (Haasnoot; Di Fant; Kwakkel; Lawrence, 2024; Haasnoot; Kwakkel; Walker; Ter Maat, 2013). In this framing, pathways function as decision-support tools: they help experts visualise branching options, identify “points of no return,” and organise uncertainty into a manageable form. Yet in practice, we observed how this planning tool also carried normative assumptions about time, value, and responsibility. It implicitly prioritised specifically manageable forms of heritage, relied on institutional memories of Dutch infrastructural mastery, and reproduced expectations of linearity and control. Environmental history can help situate these expectations within longer trajectories of water management and risk, while memory studies highlight how iconic events such as the 1953 Watersnoodramp continue to shape anticipatory orientations (Offermans; Cörvers, 2012). Within this expert-driven context, possibilities for alternative conceptions of heritage futures—particularly those held by local communities—remained only partially explored.

Following my work with the RCE, the workshops designed for the Soy Stories project aimed at placing a similar intervention of imagining different possible futures, but rather than to designate anyone on the organising side of the

workshop as an expert, we attempted to take the next step by opening the pathways logic to a wider set of voices and temporalities. Here, history was not used as a predictive tool but as a boundary object—a shared reference point that different groups could decode in their own ways (De Vos; Baccarne; De Marez; Emmanouil, 2024). Drawing on insights from participatory futures research, the workshops relied on the idea that, if cultural memory is a collective imagination of a shared past, based on an externalisation of memories from the individual into material or social form (in the broadest sense, see: Assmann, 2008; Assmann, 2000), then a collective imagination of a shared future must come from the same place. Indeed, Jeroen Oomen has written about how these shared imaginations of the future are formed and performed (Oomen, 2023; Oomen; Hoffman; Hajer, 2022). What is critical to understand from the work of Aleida Assmann, is that externalised memory layers itself not only in material form, but that these materials (books, statues, even traditions), as well as the interpretation of them by experts for laypeople, are subsequently institutionalised into what she calls cannon and archive (Assmann, 2008). This cultural mechanism works in both the literal sense, in the workings of actual cannon and archives, but also in the broader, metaphorical sense, as certain interpretations of the past are fixed in any type of institutional framework. In the field of heritage studies, Laurajane Smith (2006) launched a critique against hegemonic institutionalisation practices of heritage as what she called the Authorized Heritage Discourse (AHD). Within these readings, institutional frameworks, such as the policy frameworks of the RCE, function as the canonising forces that keep imaginaries in check.

Challenging these frameworks, climate change brings into play multiple, overlapping temporalities—ecological, historical, infrastructural, and emotional—that adaptation tools like pathways tend to linearize by projecting futures forward from a singular present. Such linearity narrows the imaginative field and obscures the branching, contingent character of historical time, which scholars from Benjamin to Koselleck treat as essential to understanding how different futures might emerge (Benjamin, 1969; Koselleck, 2004). The expert-driven RCE process highlighted how such linearity narrows the imaginative field and masks the branching, contingent character of historical time described by Koselleck and

Benjamin. The Rotterdam and Chapecó workshops were therefore designed as experiments responding directly to this critique: instead of allowing experts to produce pathways on behalf of communities, they introduced a participatory method in which participants themselves constructed pathways, and history was reconfigured as a boundary object that could be interpreted, challenged, and re-assembled in collective imagination. What emerges is a methodological insight on contested narratives and forms of knowledge: without attending to the temporal, normative, and historiographical assumptions built into adaptation tools, climate futures risk being shaped by the very imaginaries that produced the crisis in the first place.

The overall fluctuation of imaginaries governing historiographical reasoning described above is studied by Moniek Driesse (2023) in her doctoral dissertation *Leaving Dry Land: Water, Heritage and Imaginary Agency*. In her work, Driesse explores how even marginalised, more-than-human entities – in her case, water in urban spaces – acquire agency to enact particular imaginaries onto their surrounding cartographies. This point can be sharpened by bringing her work into dialogue with Walter Lowande and colleagues' discussion of "cosmological heritage." Writing from the *Museus das Rexistências* project, Lowande *et al.* conceptualise community museums as possible ecological networks of resistance, formed through the sharing of histories and cosmological inheritances among communities whose worlds have long been threatened by colonial and extractivist violence (Lowande; Silva; Silva; Vieira, 2022). Cosmological heritage serves as a useful bridge here because it names heritage not as an object to be preserved, but as a relational inheritance through which communities, nonhuman beings, landscapes and practices of care orient themselves against the futures imposed by extractivist modernity. Driesse's work sits close to this move, but points toward a similarly relational framework developed through a more explicitly elemental and planetary register. Building on her account of imaginary agency, her recent and forthcoming work on elemental heritage similarly approaches more-than-human ecologies as relational infrastructures of memory, care and resistance, foregrounding how watery, ecocentric and practice-based forms of

sensing, mapping and storytelling can pluralise dominant heritage paradigms and reorient heritage imaginaries across scales (Antwerp, 2026).

For a methodological framework surrounding the notion of historiographical reasoning that brings these notions down to a level in which they can be put into practice, my own doctoral dissertation serves a decent literature review, while subsequent articles deal with case studies of how historiographical reasoning frames the understanding of a particular identity's space in geographical and temporal space (Van De Voort, 2021a; b; 2024; 2025). In other words, historiographical reasoning is governed by two elements; on one side by imagination, which I with a paraphrase of Immanuel Kant understand as the "human faculty to make the absent [times and/or places] present" (Van De Voort, 2021a, p. 50), while it on the other hand relies on the metaphorical canon and archive of cultural memory as framed by Aleida Assmann. When imagining distant times and places, we rely on imagination, but this faculty is never free-floating: it is shaped and delimited by the culturally sedimented rules of knowledge production contained within the metaphorical canon and archive. Together, these two mechanisms will now be called historiographical reasoning.

In a certain sense, this article now deals with these frameworks in which historiographical reasoning takes place and acquires agency: the institutional framework of the RCE and the workshops in Rotterdam/Chapecó each gave room for their own particular ways in which relations between past, present and future could be imagined by operationalising cultural memories in futuring exercises.

Part I — The RCE adaptation-pathways exercise: stabilizing futures through expert-centred historiography

Institutional response and the legacy of dutch hydraulic futures

The adaptation-pathways work I conducted with Eveline de Smalen was embedded in a much larger framework of institutional knowledge-building at the RCE. As the officially designated national knowledge institution for cultural heritage within the Dutch Ministry of Education, Culture and Science, the RCE positions knowledge—not merely as information but as "quality, impact, and innovation" at the core of its mission. The RCE's *Kennisstrategie* (Knowledge

Strategy) and *Kennisplan 2024–2027* (Knowledge Plan) articulate this explicitly: heritage knowledge must respond to major societal challenges such as climate change, digitalisation, and multivocality, and must be developed in dynamic interaction with science, policy, and practice (Egberts; Burggraaff; Houk De Jong; Van Lanen *et al.*, 2024; Janssen; Van Lanen; Smit; Wijsbeek, 2021). Within this broader organisational effort to strengthen the RCE as a coordinating knowledge institution, climate adaptation was framed not simply as a technical problem but as a knowledge challenge requiring conceptual, methodological, and organisational innovation.

It was in this context that the *Strategische Verkenning Erfgoed en Klimaat* (Strategic Exploration of Heritage and Climate) was initiated. The project explored how escalating climate risks—river flooding, drought, wildfire, sea-level rise—would affect eight representative heritage cases across the Netherlands and the Caribbean parts of the Kingdom, including Radio Kootwijk, Schokland, the Wadden Sea, Bonaire, and the historic centres of Dordrecht and Valkenburg (De Smalen; Van De Voort, 2025). When commissioning the adaptation pathways, RCE colleagues pointed us toward the Deltares report “*Bouwstenen en Adaptatiepaden Zeespiegelstijging*” (Building Blocks and Adaptation Pathways for Sea-Level Rise) as “inspiration for our work on adaptation pathways for heritage”. This report, by consultancy firm Deltares, was commissioned by the Ministry of Infrastructure and Water Management, the Delta Commissioner’s Office, and Rijkswaterstaat as part of the Knowledge Programme on Sea-Level Rise. It was designed as a decision-support tool for the 2026 revision of the Dutch Deltaprogramme, providing long-term adaptive strategies, thresholds, and decision points for policymaking under conditions of deep uncertainty (Haasnoot; Diermanse, 2022). The adaptation-pathways methodology thus entered the heritage domain already shaped by a technical-scientific infrastructure developed for water governance.

Adaptation pathways themselves follow a recognisable temporal logic. They begin from a present “situation,” identify tipping points where current strategies fail, and chart a series of branching sequences—preservation measures, protective interventions, temporary relocation, selective retention, replication, or eventual loss—that institutions might need to pursue as climatic thresholds are

crossed. Although visually branching, the method ultimately rests on a linear temporality that projects futures outward from the present, modelling uncertainty as a set of conditional, sequenced decisions (Haasnoot; Di Fant; Kwakkel; Lawrence, 2024). When adapted to heritage, this structure implicitly privileges material continuity and technical control, treating heritage futures as systems that can be stabilised through anticipatory planning and timely intervention. Yet such an orientation sits uneasily with a growing body of work that treats decay, ruination, and material transformation not as failures of stewardship but as inherent, even productive, dimensions of heritage's material life. DeSilvey argues that processes of deterioration can generate "other ways of understanding and acknowledging material change" and that ruination may enable forms of memory, multispecies inhabitation, and narrative possibility that stabilized preservation regimes foreclose (Desilvey, 2017; Desilvey; Edensor, 2013). From this perspective, heritage does not simply deteriorate into loss but continually unfolds into new configurations, raising the question of whether adaptation planning should accommodate—not suppress—the entropic tendencies and ecological agency that shape heritage over time, muddling the linear temporalities that adaptation pathways suggest.

This way of imagining the future does not emerge in a vacuum. It is deeply entangled with the longstanding Dutch hydraulic imaginary forged in the aftermath of the 1953 *Watersnoodsramp* (North Sea Flood of 1953). The response to that disaster, culminating in the *Deltawerken* (Delta Works), institutionalised a narrative of Dutch mastery over water—one in which security could be engineered through infrastructure, planning, and expertise. As noted by scholars of Dutch climate governance, this narrative continues to shape how institutions such as the RCE imagine risk, resilience, and the future: as domains to be managed through rational foresight, technical modelling, and infrastructural intervention. The RCE's adoption of adaptation pathways therefore reflects not only institutional priorities but also this deeper historical inheritance. The tool sits at the intersection of the RCE's mandate as a knowledge institution, the scientific infrastructures of Deltares, and a modernist, national(ist) tradition of governing environmental futures through large-scale infrastructure projects.

Normativities embedded in adaptation planning

The adaptation pathways developed within the RCE strategic exploration reveal how ostensibly technical planning tools encode particular normative orientations toward heritage, risk, and time. Although designed to support decision-making under uncertainty, these pathways begin from a set of assumptions about what constitutes value, what forms of continuity are desirable, and who is authorised to define them. These assumptions are not merely methodological; they actively shape the horizon of possible futures that heritage institutions can imagine. The pathways do not merely organise possible actions under climate risk; they perform a specific historiography of the future. By projecting forward from an institutionalised present and privileging certain values, temporalities, and forms of expertise, the tool stabilises particular relations between past, present, and future while rendering others difficult to articulate.

A first assumption is the preservation-first bias that runs through the RCE trajectories. Even as the pathways include stages such as temporary relocation, replication, and planned loss, the architecture of the tool prioritises material survival as the default response. The RCE process is shaped by a preservation-oriented heritage ethos in which material continuity remains the implicit baseline against which other options are measured, a tendency particularly visible in the progression of recommended actions—from stabilising conditions to increasingly intrusive safeguarding measures—before more disruptive transformations enter view (De Smalen; Van De Voort, 2025). This mirrors the broader Dutch adaptation tradition, in which the infrastructural legacy of the *Watersnoodramp* and subsequent *Deltawerken* solidified a belief that futures can and should be secured through technical control and defensive design. The structure of the pathways thus reproduces a longstanding conviction that the primary responsibility of the heritage sector is to preserve physical fabric wherever possible, even when climate scenarios render this increasingly untenable.

A second assumption is the prioritisation of material over lived or relational heritage. Though the strategic exploration acknowledges intangible and community-held values, the operative categories guiding the pathways—exposure, damage thresholds, material failure, engineering limits—foreground

objects, buildings, and landscapes as technical systems. The relational practices, seasonal rhythms, cultural attachments, and place-based meanings that give heritage its lived significance remain peripheral within the planning logic. As a result, the pathways tend to privilege futures in which material structures persist, even if the social relations that animate them have shifted, disappeared, or relocated. This echoes the critique articulated in recent heritage studies that adaptation discourse often treats heritage as a set of assets to be stabilised, rather than as a set of practices and relationships that might transform in response to climate pressures (Desilvey, 2017; May; Holtorf, 2020a).

A third embedded assumption concerns the hierarchy of significance, in which national or officially recognised heritage routinely outweighs local meaning. In the RCE cases, nationally designated sites—Schokland, Radio Kootwijk, Bonaire—serve as the anchor points for scenario development, while locally embedded, non-designated forms of heritage are implicitly positioned as secondary. This hierarchy structures which losses are deemed unacceptable and which forms of change are framed as manageable. It also reflects the institutional vantage from which the pathways are produced: national agencies are mandated to safeguard nationally significant assets, and thus the planning tool reproduces the scale and priorities of its institutional context.

Lastly, the pathways encode a preference for technical expertise over community experience, shaping the epistemic boundaries of what counts as relevant knowledge. The sequential structure of the tool—identifying thresholds, mapping tipping points, modelling sequences of actions—presupposes a form of expert reasoning grounded in hydrology, engineering, and spatial planning. Local knowledge appears primarily as contextual colour or as a source of implementation challenges, rather than as a knowledge system that could reshape the problem definition itself. This dynamic reflects an institutionally embedded difficulty of integrating non-expert perspectives within an instrument designed to operationalise policy-ready futures. In our testing of the pathways as a tool, we noticed that, even when stakeholders articulate different values and temporalities, the underlying format of the pathways pulled their contributions

toward the logics of institutional planning and risk management (De Smalen; Van De Voort, 2025).

Taken together, these normative assumptions delimit the field of imaginable futures in the RCE tool. The preservation-first orientation narrows the horizon to scenarios that maintain material continuity; the privileging of material over relational heritage sidelines futures rooted in transformation rather than stabilisation; the hierarchy of national significance limits the capacity to imagine futures anchored in local attachments; and the dominance of expert knowledge renders certain experiential or relational futures unintelligible within the decision framework. Futures that embrace decay, migration of practices, re-signification of place, or the emergence of new heritage forms become difficult to articulate within a tool whose structure already anticipates which futures are legitimate.

Seen through the lens of Arturo Escobar's call for a pluriversal politics—a commitment to “a world where many worlds fit” (Escobar, 2018, p. xvii)—the limitations of the RCE framework become even clearer: its design enacts a one-world ontology in which only certain kinds of futures can exist. This contrast provides a bridge to the workshop formats discussed in the next section, where participants were able to surface bottom-up critiques, articulate multiple temporalities, and experiment with forms of world-building that exceed the linear, preservation-oriented logics embedded in institutional adaptation tools.

Ailton Krenak pushes this critique further by showing how the modern one-world-world rests on the erasure of other epistemologies. The notion of “humanity” that underpins modern institutions is, he writes, a narrow construct that excludes most forms of life—“essa ideia prospectiva de que estamos indo para algum lugar,” (“this forward-looking idea that we are going somewhere”) leaving behind everything that does not fit its trajectory (Krenak, 2023, p. 7). Such a worldview cannot recognise the knowledges of rivers, mountains, ancestors, or the collective subjects whose existence is inseparable from place (Krenak, 2018). By contrast, Indigenous cosmologies assume a multiplicity of worlds, each animated by different temporalities and relations—what Krenak evokes when he describes rivers and ancestral beings as companions in future-making (Krenak, 2022). Bringing these insights into view helps explain the need to allow workshop

participants to gravitate toward alternative temporalities and world-building practices that exceed the narrow normative frame of the RCE tool.

Part II — The Rotterdam & Chapecó workshops: weworking the pathways logic from below

Why a new experiment was needed

The adaptation pathways used in the RCE exploration displayed a strong reliance on expert-defined thresholds, preservation-first logics, and linear temporal sequencing. While the tool sought to support decision-making under climate uncertainty, its architecture nevertheless oriented participants toward a circumscribed set of legitimate futures—those that could be articulated within an expert-driven framework. This constrained the entry of alternative forms of knowledge and temporal experience, limiting the imaginative scope of the exercise. The structure of the tool made it difficult for participants to articulate futures rooted in lived, relational, or more-than-human dimensions of heritage; these forms of knowing remained marginal or were translated back into institutional categories. Although the tools are successful in suggesting that we take climate change seriously, its linearity and reliance on pre-structured options left little room for historical contingency, branching pasts, or the multiplicity of temporalities that matter to heritage under conditions of accelerating climate change.

These limitations resonated directly with the diagnosis that underpin the Soy Stories project. In its most basic premise, the project argues that contemporary sustainability imaginaries suffer from their own forms of reductionism: they tend to reproduce isolated regional narratives, ignore transregional entanglements, and treat sustainability as a universal category rather than a contested historical object. This impoverished historiographical landscape has a performative effect: when historical knowledge is flattened, future thinking becomes flattened alongside it. The Soy Stories project explicitly formulates its objective as the development of inclusive, plural, and connected sustainable future imaginaries, recognising that these cannot emerge from conventional policy-oriented futuring alone. The inclusion of transdisciplinary

research (TDR) in the project was intended precisely to test how new knowledge production practices might unsettle entrenched habits of imagining the future and open space for relational, multi-sited thinking (Van Der Vleuten; De Hoop; Broerse; Silva, 2022).

In that context, the “historiographical intervention” became a methodological necessity. Building on van der Vleuten and de Hoop’s articulation of transnational, transformative, and transdisciplinary historiography, the idea of this type of intervention seeks to treat historical knowledge not as retrospective analysis but as an active site where futures are reorganised. Their conceptualisation of historiographical work as a form of *transformative action*—capable of interacting with present-day controversies and future-making practices—provided the intellectual scaffolding for turning workshops into experimental sites of future production (Van Der Vleuten; De Hoop, 2025).

Following the limitations observed in the RCE adaptation-pathways exercise, the Soy Stories project developed a series of experimental workshops to explore whether introducing historical knowledge at the outset of a futuring process could widen participants’ sense of what futures were imaginable. The first of these took place in Rotterdam, during a multi-day seminar on global soy flows attended by early-career urbanists, sustainability researchers, and practitioners from several countries. This workshop served intentionally as a test case—a controlled setting in which we could trial the method, observe how participants interacted with the historical material, and refine the format before running a second, more deeply embedded workshop in Chapecó with actors directly involved in the Brazilian soy complex. What we learned in Rotterdam—both the method’s strengths and its frictions—directly informed the design of the Chapecó workshop several months later.

Across both settings, the workshops were designed to *reconfigure* the logic of conventional adaptation tools. Instead of beginning with a fixed present and projecting decision pathways forward in a linear, expert-driven sequence, the exercises foregrounded historical multiplicity, situated knowledge, and narrative plurality. Historical knowledge was introduced not as contextual background but as an *active element* in a co-creative futuring process—what we call a

historiographical intervention. This methodological shift—from institutional historiography to participatory historiographical practice—forms the conceptual bridge to the workshop design detailed below.

History as boundary object: method and design

In both Rotterdam and Chapecó, history was operationalised as a boundary object: a shared but flexible referent that participants could interpret, misinterpret, challenge, or repurpose according to their own social positions and expectations of the future. Following De Vos *et al.* (2024), boundary objects work because they carry multiple types of knowledge—tacit, codified, experiential, speculative—without forcing them into premature consensus. The workshops were structured around three interconnected stages, each intended to activate different temporal registers and create room for heterogeneous interpretations. Treating history as a boundary object helps explain why the same historical provocations could generate divergent future imaginaries without requiring interpretive consensus: history functioned simultaneously as shared reference point and as a flexible resource for situated reinterpretation.

Historical provocations

Each workshop began with short historical provocations. In Rotterdam, Caroline Kreysel delivered a lecture tracing entangled human and more-than-human histories of soy across Rotterdam's harbour, the Brazilian Pantanal, and the Dutch Peel. In Chapecó, this format was expanded with a second lecture by Nathaly Yumi da Silva on the multispecies life of the brown stinkbug in Brazilian soy monocultures. Rather than offering a single coherent narrative, these interventions juxtaposed hydrological change, agricultural frontiers, policy ruptures, multispecies interactions, and transnational commodity flows—temporalities that rarely align neatly. By highlighting the multi-situated routes of history and the multiplicity of subjectivities involved, the lectures disrupted linear expectations and signaled that present crises sediment multiple pasts.

Opening up the conversation

The second step in the workshops focused on opening up participants' perspectives rather than applying a formal mapping exercise. In Rotterdam, this took the form of a short, playful ice-breaker in which participants traced the origins of their everyday food on a wall-sized world map. The activity was not a core analytical tool but a way to surface existing associations with global commodity flows and to ease participants into thinking aloud about soy, trade, and responsibility in a low-stakes setting. It also allowed us to register, in passing, how unevenly distributed awareness of these connections already was in the room.

In Chapecó, by contrast, there was no mapping component. Instead, local partners invited participants—most with academic, activist, or lived experience in soy-producing rural areas of Santa Catarina and Rio Grande do Sul—to articulate their own concerns and experiences in an open discussion before moving to the pathway work. This conversational round was used to foster dialogue across backgrounds, to make visible the diversity of positions in the room, and to create a shared, if uneven, sense of the issues at stake in the regional soy complex. In both settings, this intermediary step functioned as a divergent phase in De Vos et al.'s sense: a moment where tacit and experiential knowledge could circulate freely, without yet being organised into scenarios or pathways, and where the historical provocations could begin to resonate with participants' own stories and problem framings.

Co-creation of adaptation pathways

The third stage inverted the expert-centred logic of adaptation planning. Using post-its, large sheets, and markers, participants constructed their own adaptation pathways linking past drivers, present concerns, and speculative futures. This was where the Rotterdam workshop's test function became visible: by observing how participants grappled with historical material in this format—when they used it, ignored it, or transformed it—we were able to refine the prompts, pacing, and facilitation strategies for Chapecó.

In both locations, participants authored branching, contingent, multi-temporal futures. Some groups revived forgotten cooperative experiments; others

extrapolated from histories of degradation; still others imagined multispecies futures shaped by pests, pathogens, or ecological collapse. Crucially, once the lectures ended, narrative authority shifted: the historians stepped back, and participants determined which historical fragments mattered. Misremembering, selective uptake, or creative reinterpretation were not treated as errors but as typical behaviours of boundary objects. Meaning became co-produced, not transmitted.

Plural temporalities entering the room

Across the three stages, the workshops made plural temporalities palpable. Ecological cycles, infrastructural chronologies, political histories, family memories, and national mythologies all entered the room simultaneously. Participants moved fluidly between them: discussing parental migration while sketching hydrological tipping points; invoking Cold War-era rural policies while imagining multispecies futures; drawing on memories of cooperative farming while critiquing present agribusiness structures. This temporal layering is central to understanding climate crises as historiographical problems. By treating history as a boundary object, the workshops did not aim to produce historical literacy but to expand the field of possible futures—and to broaden the range of actors who feel authorised to imagine them.

Epistemic and temporal effects of the historiographical intervention

Across both workshops, the moment participants began constructing their own pathways revealed most clearly how the historiographical intervention reshaped the imaginative field. Rather than treating the provocations as information to be reproduced, participants mobilised historical fragments as resources for thinking otherwise, introducing temporal, political, and moral dimensions that remain largely inaccessible within conventional adaptation tools.

The workshops revealed that participants related to the historical material in markedly different ways. Some treated the provocations as anchors and sought to remain close to “what really happened,” others inserted their own biographical

or community histories into the narrative, and still others treated the historical fragments as invitations to imagine alternative trajectories and to disrupt linear renderings of climate change. This plurality of engagements exemplifies the dynamics of history as a boundary object: simultaneously stabilising for some, disruptive for others, and generative of new temporal possibilities when these different modes of relating to the past interact.

Participants also introduced branching temporal structures that diverged sharply from the expert logic of the RCE adaptation pathways. While those pathways ultimately rest on models projecting outward from a defined present, workshop participants instead traced contingent futures that hinged on political decisions, institutional failures, or ecological thresholds remembered from the past. These branching structures echoed what the historical provocations had made available: the sense that history could have unfolded otherwise, and therefore that futures, too, need not be governed by institutional expectations of continuity or control.

One of the most striking effects of bringing history into the process was the recovery of roads not taken—abandoned policy experiments, forgotten cooperative traditions, suppressed environmental knowledge, or multispecies relations rendered invisible by dominant agricultural models. The historical provocations turned out to be generative here: Kreysel's histories of rivers and wetlands, and da Silva's multispecies account of the brown stinkbug, provided participants with alternative temporal anchors they could draw on to imagine futures rooted in practices that had been displaced rather than extinguished. In Chapecó, participants revived historical forms of collective action as viable future strategies; in Rotterdam, they speculated on infrastructures and trade relations that might have evolved differently.

Participants also used history to articulate situated grievances, reframing climate futures through local experiences of injustice, extraction, and marginalisation. These grievances were not merely expressive; they became structuring forces for imagining what climate action should entail. Participants connected pesticide exposure, historical land dispossession, transnational supply-chain inequities, and memories of political repression to their visions of more

desirable or unacceptable futures. This dynamic leads thoughts back to Oomen's work on futuring, which emphasises that collective imaginations of the future are shaped by the moral and emotional residues of past conflicts. By integrating these histories into the pathway exercise, participants effectively expanded the normative horizon of the workshop: futures could not be imagined without reckoning with the responsibilities inherited from the past.

Together, these uses of history pushed the workshops beyond the technocratic or infrastructural imaginary that dominated the RCE's adaptation-pathways process. Instead of focusing on engineered interventions or optimisation strategies, participants foregrounded political agency, moral responsibility, community practices, and multispecies relations. They approached futures as arenas of negotiation rather than technical problems to be solved. History, mobilised as a boundary object, made space for imaginaries that included transformation rather than preservation, relational repair rather than control, and social struggle rather than optimisation. In the terms of De Vos *et al.* (2024), this marked a shift from the stabilising tendencies of expert-led futures toward the generative potential of boundary objects to hold conflict, plurality, and uncertainty without reducing them to consensus.

Finally, the workshops demonstrated how memory acts as a catalyst, not by dictating what should be remembered but by enabling participants to draw unexpected connections across time and scale. Rothberg's notion of multidirectional memory applies neatly here, as the memories in the workshops did not displace one another but instead opened onto new configurations and solidarities. In both workshops, historical fragments from distinct contexts—wetland transformations, multispecies encounters, cooperative histories, state repression, global trade relations—were reassembled into futures that none of the participants, nor the facilitators, could have anticipated. This confirms the underlying premise of the historiographical intervention: that introducing history early in the futuring process expands the imaginative repertoire available for thinking about climate futures.

Comparing the interventions: what changes when history enters the room first?

Contrasting the two interventions—the RCE adaptation pathways and the Rotterdam/Chapecó workshops—makes visible how beginning with history fundamentally reorganises the epistemic, temporal, and normative structure of adaptation practice. The RCE pathway model rests on stabilising a present and projecting forward through sequenced decision points. Its authority is anchored in expert knowledge, technical models, and a preservation-oriented heritage logic that treats futures as problems to be anticipated, mitigated, and steered. When history enters only as “context,” the present becomes the unquestioned temporal anchor; alternatives appear only as branches within an already-defined system of solutions.

By contrast, the workshops in Rotterdam and Chapecó inverted this logic by introducing history first. The short provocations—human and more-than-human stories, ecological entanglements, discarded experiments, and “roads not taken”—activated boundary-object dynamics that allowed participants to inhabit pasts not as fixed sequences but as reservoirs of possibility. This shift redistributed authority in decisive ways. Rather than expert-led diagnosis followed by stakeholder consultation, participants themselves became the ones who articulated which fragments of history mattered for imagining futures. As in De Vos *et al.* (2024), interpretive flexibility produced generative friction rather than confusion: divergent memories, scales, and temporalities became productive sites for future-making rather than obstacles to alignment.

This reconfiguration also altered narrative framing. In the RCE pathways, narratives orbit around loss avoidance, threshold management, and the controlled descent from preservation toward more radical options. Futures remain tied to the values and temporal assumptions embedded in institutional heritage practice. In the workshops, narrative authority shifted outward: participants drew on familial histories, cooperative traditions, more-than-human relations, political ruptures, and sensory experience to shape the futures they envisioned. These were not merely alternative “inputs”; they introduced new grammars for imagining transformation—grammars in which memory, injustice, ecological agency, and

uncertainty became constitutive elements of futuring itself. Viewed through this lens, the workshop narratives demonstrate the relevance of both Lowande and colleagues' account of cosmological heritage in community museums as ecological networks of resistance and Driesse's developing elemental heritage perspective. Both approaches shift heritage away from an institutional logic centred on preserving bounded objects and instead foreground relational inheritances—histories, waters, species, cosmoperceptions, and practices of care—through which communities can actively contest colonial-extractive futures (Antwerp, 2026; Driesse, 2023; Lowande; Silva; Silva; Vieira, 2022). With this in mind, it is clear that the workshop outcomes should not be seen as expressions of supplementary ethical concerns, but as evidence that more-than-human relations, cooperative memory, and situated practices of care can function as alternative historiographical grounds from which futures can be imagined. In doing so, they point toward ways of understanding history that challenge dominant modern frameworks and open space for imagining futures grounded in relationality, ecological interdependence, and collective forms of resistance.

Temporal structure shifted accordingly. The RCE pathways reflect an infrastructural temporality shaped by Dutch hydraulic history: futures unfold linearly, intervention points are sequenced, and uncertainty is something to be managed. The workshops made temporal plurality explicit. Multiple timescales—ecological, biographical, political, multispecies—entered simultaneously, and participants learned to work across them. Rather than reducing temporal complexity, the workshops treated it as a condition for imagining futures otherwise. In this type of intervention, historiographical thinking does not stabilise time but multiplies it.

Finally, the value hierarchies underlying each intervention diverged. The RCE model privileges material continuity and managerial foresight; what counts as heritage value is largely pre-defined. The workshops enabled participants to articulate different value orders: community resilience, cooperative memory, multispecies co-presence, critique of agribusiness expansion, affective ties to wetlands and soils, and forms of care not recognised in institutional categories. The imagined futures that emerged were therefore qualitatively different. Rather

than infrastructural futures centred on preservation thresholds, participants articulated political, ecological, and relational futures—some grounded in repair, others in rupture, others still in speculative coexistence.

Taken together, these contrasts demonstrate how beginning with history—as boundary object, as method, as intervention—reshapes the very architecture of adaptation practice. Instead of treating climate futures as problems to be modelled from the present outward, the workshops repositioned them as ongoing negotiations between plural pasts and emergent possibilities. In doing so, they respond directly to the call for historically grounded, transdisciplinary, transformative methodologies: approaches that neither retreat into historiographical distance nor collapse into technocratic solutionism, but instead cultivate the temporal and narrative conditions under which more just, plural, and context-sensitive futures can be imagined.

Revealing and challenging the normativities of adaptation

The pages above have shown how the RCE adaptation-pathways and the Rotterdam/Chapecó workshops represent two markedly different ways of organising climate futures. Where the RCE process stabilised uncertainty through expert-centred modelling and preservation-oriented logics, the workshops used historiographical interventions to bring alternative temporalities, knowledges, and moral claims into view. Together, these cases illustrate a broader methodological question at the heart of this article: how do forms of historical reasoning mediate climate adaptation, and how might attending to these mediations produce more reflexive forms of future-making? The discussion now draws the strands together to reflect on what becomes visible when adaptation practices are treated not only as technical instruments but also as historiographical and political acts.

The RCE adaptation pathways demonstrate how institutional tools can present political choices in the neutral idiom of technical planning. The pathway diagrams, with their sequenced intervention points and decision thresholds, appear to offer an objective structure for navigating uncertainty. Yet as the analysis above makes clear, these tools encode a preservation-first heritage logic, a linear temporal imaginary rooted in Dutch hydraulic history, and an epistemic hierarchy that privileges expert judgement over situated, experiential, or more-

than-human forms of knowledge. These assumptions are not simply methodological conveniences; they actively delimit the field of possible futures by naturalising particular values—material continuity, institutional control, national significance—while marginalising others. In this sense, the tool performs a form of historiography: it stabilises what counts as meaningful pasts and desirable futures through its technical form.

It is precisely here that the historiographical interventions in the Rotterdam and Chapecó workshops perform their most consequential work. By introducing historical fragments—Kreysel’s multi-sited environmental histories, da Silva’s multispecies narrative, and participants’ own memories—at *the beginning* of the futuring process, the workshops reopened these normative assumptions to contestation. History functioned as a boundary object, enabling participants to identify, unsettle, or reconfigure inherited storylines of control, progress, and preservation. Instead of accepting the temporality embedded in institutional tools, participants generated branching, contingent, and morally charged futures grounded in situated grievances, more-than-human entanglements, and forgotten “roads not taken.” These imaginaries exposed how ostensibly neutral adaptation tools are already shaped by narrative traditions and political priorities—and demonstrated that alternative futures become thinkable when history is mobilised not as context but as a generative, disruptive force.

Pluralising temporalities and scales

If the previous subsection showed the normativity built into adaptation planning, bringing the two interventions into dialogue also makes clear that historiographical practices do not merely correct the normative biases of adaptation tools—they actively transform the temporal and spatial grammar through which climate futures are imagined. When participants engaged historical material as a boundary object, the result was a proliferation of temporalities and scales that challenged the linear, expert-driven sequencing of the RCE pathways.

In the institutional pathways, climate futures are tied to established infrastructural time: a chronological unfolding from present conditions to

increasingly sophisticated technological interventions. Such linearity allows uncertainties to be managed, but it also reduces the complex temporalities of climate change—slow violence, abrupt tipping points, multispecies adaptation, sedimented injustices—to a single storyline. The workshop formats introduced an alternative. Participants drew on disparate histories to assemble futures that were multi-temporal rather than unilinear. Futures were imagined as contingent, recursive, and historically thick, shaped as much by remembered grievances or ecological agency as by institutional forecasts.

The workshops also expanded the spatial scales at which climate futures could be imagined. Kreysel's and da Silva's provocations made visible the transnational and more-than-human entanglements through which soy-related crises unfold, unsettling the implicit assumption that adaptation is primarily a local or national matter. Participants moved fluidly between the scale of a single farm, a river basin, a port city, and the global soy supply chain—showing that climate futures are produced by interactions across these scales rather than contained within any single one. More-than-human histories entered as well: stinkbug lifecycles, river dynamics, soil exhaustion, wetland degradation. These actors shaped participants' futures as concretely as states or communities did, echoing insights from environmental humanities that emphasise climate change as a multi-scalar, multispecies phenomenon. In creating space for such histories, the workshops pluralised not only temporalities but also the scales and agents considered relevant for imagining climate futures.

Redistributing authority and expanding expertise

Building on the previous sections—which showed how historical interventions unsettle normative assumptions and open multi-scalar futures—the workshops also illuminate a deeper epistemic shift: the imagination of climate futures cannot be monopolised by experts, because imagination itself is not a scarce professional resource but a relational, collective capacity. When climate governance relies on expert-centric tools, such as adaptation pathways, it implicitly narrows the field of possible futures by privileging one world-making logic over others. In Escobar's formulation, modern institutions tend to act as if

there is one world, rather than “a world where many worlds fit” (un mundo en que quepan muchos mundos) (Escobar, 2018, p. 15–17). The RCE exercise exemplifies this tension: its sequential, technocratic structure frames imagination as projection and control, and the task of future-making remains tied to institutional logics of preservation and technical manageability.

The workshops, by contrast, attempted to enact something closer to Escobar’s pluriversal ethos. What sets them apart from the RCE work is not simply method but mode of historiographical reasoning: one stabilises futures through inherited narratives of control, the other pluralises them through participatory reworking of the past. Participants in Rotterdam and Chapecó did not merely receive expert scenarios but activated their own imaginative repertoires—rooted in memory, ecological experience, affect, and place—to articulate futures that exceeded the institutional grammar of thresholds and decision points. This redistribution of imaginative authority revealed that alternative worldings were already present, waiting for methodological openings to surface. Ordinary participants demonstrated what Escobar describes as the political activation of relationality: the capacity to imagine and enact futures grounded in entangled social, ecological, and more-than-human relations rather than top-down design (Escobar, 2018). Here, historiographical practice became the method that enabled this shift. The historical provocations functioned not as didactic content but as invitations into what Moniek Driesse (2023, p. 72–73 & 314) calls imaginary agency—the capacity to think, feel, and orient oneself otherwise, to “(re)imagine the past, present and future” through encounters that disrupt fixed categories and open new alignments. In both Rotterdam and Chapecó, participants used historical fragments to unmoor themselves from the linear, stabilising logic of expert-led planning. They drew on memories, multispecies stories, transnational connections, and embodied experiences to craft futures that were not simply variations on expert models but alternative possibilities grounded in different relations, values, and temporalities.

In this sense, historiography became participatory design. By selecting, interpreting, and recombining pasts, participants performed precisely the kind of relational world-making that Escobar associates with pluriversal design and that

Driesse identifies as a practice of navigating beyond “fixed geocodes” through imaginative reorientation (Driesse, 2023, p. 313). Historiographical work allowed participants to inhabit multiple worlds at once—wetlands past and future, soy frontiers and port cities, rivers and infrastructures, human and more-than-human agencies—and to negotiate among them without requiring consensus. Through this process, participants acquired not only narrative tools to ground hyperobjects in specific temporal and spatial presents, but indeed also a felt sense of agency: the understanding that they, too, can shape the stories that structure climate futures.

This also suggests a more practical way to connect fluid, situated workshop processes to policy tools without neutralising their transformative potential. The point is not to standardise the outcomes of participatory historiographical interventions into a new expert template, but to introduce them recursively into the policy process. Before policy modelling begins, historiographical workshops can help identify plural histories of loss, attachment, responsibility, injustice, ecological relation, and possible futures that would otherwise remain outside the formal problem definition. During pathway design, these histories can be used to question the default categories through which adaptation options are organised, including preservation, relocation, replication, selective maintenance, documentation, and planned loss. After draft pathways have been produced, they can be returned to participants as revisable boundary objects rather than presented as final expert outputs. In this form, participatory historiographical work does not replace institutional tools such as adaptation pathways. Instead, it reorients them by ensuring that the categories, thresholds, and futures they contain remain accountable to the situated histories and plural worlds they seek to govern.

The workshops therefore demonstrate that redistributing imagination is not a threat to expertise or policy relevance, but a necessary condition for dealing with uncertain climate futures through a plurality of knowledge. When imagination circulates beyond institutional boundaries, climate futures cease to be singular or technocratic. They become pluriversal—reflecting the coexistence of many worlds—and they become agentic, shaped through collective capacities to sense,

remember, contest, and reassemble relationships across time and space. Historiographical practice thus emerges not merely as an analytic intervention but as a method for cultivating imaginary agency: a way of enabling communities to participate in the making of futures that are grounded in relational, situated, and diverse understandings of what climate change is and what it demands.

The practical implication is not that adaptation pathways should be abandoned in public policy, but that they should be redesigned as historically reflexive and participatory instruments. Before thresholds and options are fixed, institutions should create spaces in which communities can articulate the pasts, losses, obligations, and more-than-human relations that shape what adaptation means. During pathway construction, these histories should be allowed to challenge the categories through which heritage value is defined. After pathways are drafted, they should return to participants as revisable boundary objects rather than expert conclusions. In this sense, historiographical intervention offers a way to connect the situated and subjective character of participatory future-making to public policy without reducing it to a standardised template.

Reference

ANTWERP, U. O. **Onderzoek Moniek Driesse**. 2026. Available at: https://www.uantwerpen.be/nl/personeel/moniek-driesse_28593/onderzoek. Accessed on: 16 June 2026.

ASSMANN, A. Canon and Archive. *In*: ERLL, A. e NÜNNING, A. (ed.). **Cultural memory studies: an international and interdisciplinary handbook**. Berlin: Walter de Gruyter, 2008. p. 97–107.

ASSMANN, J. **Das kulturelles gedächtnis: schrift, erinnerung und politische identität in frühen hochkulturen**. München: Beck, 2000.

BENJAMIN, W. Theses on the Philosophy of History. *In*: ARENDT, H. (ed.). **Illuminations**. 1st Schocken paperback ed. New York: Schocken Books, 1969. p. 253–264.

DE SMALEN, E.; VAN DE VOORT, S. Adaptatiepaden erfgoed. *In*: HOE GAAN WE OM MET ERFGOED ALS EXTREME KLIMAATEFFECTEN REALITEIT WORDEN?, 2025, Amersfoort. **Proceedings** [...]. Amersfoort: Rijksdienst voor het Cultureel Erfgoed, 3 abr. 2025. Available at:

<https://www.cultureelerfgoed.nl/actueel/agenda/2025/04/03/bijeenkomst-extreme-klimaateffecten>. Accessed: 24 Aug. 2026.

DE VOS, E.; BACCARNE, B.; DE MAREZ, L.; EMMANOUIL, M. Like Stones in The River: Understanding The Nature of Boundary Objects in Participatory Futures Workshops. **Journal of Futures Studies**, [s. l.], v. 29, n. 1, 2024.

DESILVEY, C. **Curated decay**: heritage beyond saving. Minneapolis: Univ. of Minnesota Press, 2017.

DESILVEY, C.; EDENSOR, T. Reckoning with ruins. **Progress in human geography**, [s. l.], v. 37, n. 4, p. 465–485, 2013.

DIJSTELBLOEM, H.; TOOM, V.; DE VRIES, A. Tides of Time: The Dutch Delta Works as Time-Mediating Climate Adaptation Infrastructure. **Tecnoscienza–Italian Journal of Science & Technology Studies**, [s. l.], v. 15, n. 2, p. 17–37, 2024.

DRIESSE, M. **Leaving dry land: water, heritage and imaginary agency**. Gothenburg: [s. n.], 2023.

EGBERTS, L.; BURGGRAAFF, W.; HOUK DE JONG, A.; VAN LANEN, R. J. *et al.* **Kennisplan Rijksdienst voor het Cultureel Erfgoed 2024–2027**. Amersfoort: Rijksdienst voor het Cultureel Erfgoed, Ministerie van Onderwijs, Cultuur en Wetenschap, 2024.

ERLL, A. Transculturality and the eco-logic of memory. **Memory studies review**, [s. l.], v. 1, n. 1, p. 17–35, 2024.

ESCOBAR, A. **Designs for the pluriverse: radical interdependence, autonomy, and the making of worlds**. [Durham, USA]: Duke University Press, 2018.

HAASNOOT, M.; DI FANT, V.; KWAKKEL, J.; LAWRENCE, J. Lessons from a decade of adaptive pathways studies for climate adaptation. **Global Environmental Change**, [s. l.], 88, p. 102907, 2024.

HAASNOOT, M.; DIERMANSE, F. **Analyse van bouwstenen en adaptatiepaden voor aanpassen aan zeespiegelstijging in Nederland**. [S. l.]: Deltares, 2022.

HAASNOOT, M.; KWAKKEL, J. H.; WALKER, W. E.; TER MAAT, J. Dynamic adaptive policy pathways: A method for crafting robust decisions for a deeply uncertain world. **Global Environmental Change**, [s. l.], v. 23, n. 2, p. 485–498, 2013.

HARRISON, R.; DESILVEY, C.; HOLTORF, C.; MACDONALD, S. ‘For ever, for everyone ...’. In: HARRISON, R.; DESILVEY, C., *et al* (ed.). **Heritage futures: comparative approaches to natural and cultural heritage practices**. London: UCL Press, 2020. cap. 1, p. 3–19.

HARVEY, D. C.; PERRY, J. Heritage and climate change: The future is not the past. *In: The Future of heritage as climates change*. [S. l.]: Routledge, 2015. p. 23–42.

JANSSEN, J.; VAN LANEN, R. J.; SMIT, B.; WIJSBEEK, N. **Kennisstrategie Rijksdienst voor het Cultureel Erfgoed**. Amersfoort: Rijksdienst Cultureel Erfgoed, February, 2021.

KOSELLECK, R. **Futures past**: on the semantics of historical time. New York: Columbia University Press, 2004.

KRENAK, A. Ecologia política. **Ethnoscintia-Brazilian Journal of Ethnobiology and Ethnoecology**, [s. l.], v. 3, n. 2, 2018.

KRENAK, A. **Futuro ancestral**. São Paulo: Companhia das Letras, 2022.

KRENAK, A. **La vida no es útil**. [Chile]: Canopus Editorial Digital, 2023.

LOWANDE, W. F. F.; SILVA, N. N.; SILVA, J. F. R.; VIEIRA, N. J. A. P. T. Museus das Resistências: potencializando histórias para adiar o fim do mundo. **Revista da Associação Brasileira de Pesquisadores/as Negros/as (ABPN)**, [São Paulo], v. 14, n. 41, p. 268–286, 2022.

MAY, S.; HOLTORF, C. Uncertain futures. *In: HARRISON, R.; DESILVEY, C. et al* (ed.). **Heritage futures: comparative approaches to natural and cultural heritage practices**. London: UCL Press, 2020a. p. 263–275.

MAY, S.; HOLTORF, C. Uncertainty, collaboration and emerging issues. *In: HARRISON, R.; DESILVEY, C. et al*. (ed.). **Heritage futures: comparative approaches to natural and cultural heritage practices**. London: UCL Press, 2020b. p. 336–343.

MORTON, T. **Hyperobjects: philosophy and ecology after the end of the world**. Minneapolis: University of Minnesota Press, 2013.

OFFERMANS, A.; CÖRVERS, R. Learning from the past; changing perspectives on river management in the Netherlands. **Environmental Science & Policy**, [s. l.], v. 15, n. 1, p. 13–22, 2012.

OOMEN, J. Futuring in climate politics: activism and the politics of the imagination. *In: Climate, science and society*. [London]: Routledge, 2023. p. 289–295.

OOMEN, J.; HOFFMAN, J.; HAJER, M. A. Techniques of futuring: on how imagined futures become socially performative. **European Journal of Social Theory**, [s. l.], v. 25, n. 2, p. 252–270, 2022.

PETERSEN, A. C.; BLOEMEN, P. **Planned adaptation in design and testing of critical infrastructure**: the case of flood safety in The Netherlands. London: UCL STEaPP, 2015.

PRIEBE, J.; MÅRALD, E.; NORDIN, A. Narrow pasts and futures: how frames of sustainability transformation limit societal change. **Journal of Environmental Studies and Sciences**, [s. l.], v. 11, n. 1, p. 76–84, 2021.

SILVA, N. Y. **Pests on the plantation**: unravelling the Coexistence of the Stink Bugs with Brazilian Soybeans, [2026?]. forthcoming

SMITH, L. **Uses of heritage**. illustrated edition ed. New York: Routledge; Taylor & Francis Group, 2006 2006. 369 p.

TSING, A. L.; BUBANDT, N.; GAN, E.; SWANSON, H. A. Introduction: Haunted landscapes of the Anthropocene. *In*: **Arts of living on a damaged planet: ghosts and monsters of the anthropocene**. Minneapolis: University of Minnesota Press, 2017. p. G1–G16.

VAN DE VOORT, S. **90 miles of mirror: reimagining cultural memory through the case of Cuban-American migrants in Miami**. 2021. (PhD), University of Nottingham, Nottingham, 2021a. Available at: <http://eprints.nottingham.ac.uk/65888>. Accessed: 24 Aug. 2026.

VAN DE VOORT, S. Om øen der gentager sig selv på fastlandet: Hvordan cubanske og cubansk-amerikanske tidsbilleder tegner grænser. **Temp-tidsskrift for historie**, [s. l.], v. 11, n. 22, p. 130–146, 2021b.

VAN DE VOORT, S. “Don’t tell us we’re not Cuban!” How political nostalgia makes Miami and Miami makes nostalgia political. *In*: BOZOĞLU, G.; CAMPBELL, G., *et al* (ed.). **The Routledge handbook of politics**. London: Routledge, 2024.

VAN DE VOORT, S. Re-membering home in space and time from Chilean exile in Gothenburg. *In*: LEINONEN, J.; FRØLAND, H. O., *et al* (ed.). **Forced migrants in nordic histories and historiographies**. Helsinki: Helsinki University Press, 2025. p. 347.

VAN DE VOORT, S.; DE HOOP, E.; KREYSEL, C.; SILVA, N. Y. *et al*. Setting the Agenda for Transdisciplinary Historical Research. **TBD**, [2027?]. Forthcoming.

VAN DE VOORT, S.; KREYSEL, C.; ANDRIOLI, M.; CRUZ, L. G. M. *et al*. Between the rows of the plantation: mobilizing environmental histories for sustainability debates. *In*: MOSS, T. (ed.). **From time to time: on working with and through the past, now, for the future**: The Mattering Press, [2026?]. Forthcoming.

VAN DER VLEUTEN, E.; DE HOOP, E. Plural pasts, plural futures. Considerations for transnational, transformative, and transdisciplinary histories of socio-material-ecological change. *In*: **Les techniques ont-elles une patrie ? Retour sur le nationalisme et l’ethnocentrisme dans l’histoire des techniques**. [Paris]: Presses des Mines, 2025. p. 295–325.

VAN DER VLEUTEN, E.; DE HOOP, E.; BROERSE, J. E. W.; DA SILVA, C. M. **Soy stories**: connected (sustainability) histories and futures of the global Soyacene. Eindhoven; Amsterdam; Chapecó: Eindhoven University of Technology; Vrije Universiteit Amsterdam; Universidade Federal da Fronteira Sul, 2022.