



What is lost from climate change? Phenomenology at the “limits to adaptation”

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Abstract. Defining experiences of climate change loss and damage (L&D) is the topic of contentious debate across the social sciences and humanities. In this paper, we contribute to this debate by making loss(es) from climate change better legible. After detailing the complexity of the L&D debate from both a political and scientific perspective, we turn to phenomenological theory (Martin Heidegger, Tetsuro Watsuji, Bernhard Waldenfels) in order to make sense of climate’s presence and the absences generated from changing climates. The phenomenology of loss we develop promises to help account for experiences of climate change that escape more traditional (social) scientific approaches to both economic and non-economic losses. More broadly, we present an alternative approach to applying phenomenology to research in social science (on climate change).

1 Introduction

As global warming continues, societies are forced to either mitigate or adapt in the hopes of softening the impact of anthropogenic climate change. Debates around climate change mitigation and adaptation bring to the surface competing interests, which shape why we continue to disagree about climate change, even as the science on global warming is settled (Hulme, 2009).

On a more principal level, disagreement extends to the very question of what climate (change) is and how it is experienced across the social sciences and humanities: in anthropology (Rudiak-Gould, 2013; Knox, 2020; O’Reilly et al., 2020; Schnegg, 2021), cultural studies (Neimanis and Walker, 2014; Whyte, 2017; Horn, 2018), geography (Hulme, 2017; Brace and Geoghegan, 2011; Wright and Tofa, 2021; Sultana, 2022), history (Chakrabarty, 2009, 2018), media studies (Schneider, 2018), political science (Tschakert et al., 2019), science and technology studies (Jasanoff, 2010), and sociology (Nightingale et al., 2019).

The difficulty of defining climate (change), as well as finding an answer to the question of if (and how) climate change can be experienced, is intensified in the debate surrounding loss and damage from climate change (L&D). Taking place

at the very limits to adaptation, this debate foregrounds the particular difficulty of making sense of experiences of *loss* from climate change. In conceptualising such loss, the high stakes of existential harm (Boyd et al., 2017) meet the intangible and immaterial nature of so-called non-economic losses (NELs) (Tschakert et al., 2019; Serdeczny et al., 2018).

Our contribution to the debate thus outlined is threefold: (i) our article is motivated by making sense of how climate and its changes are experienced. More narrowly, (ii) we principally contribute to the L&D debate around “intangible, non-economic/non-market loss and damage” (Tschakert et al., 2019:58) by offering a phenomenological account of the “concept of loss” which “remains poorly theorized” (Barnett et al., 2016:976). As Barnett et al. (2016:977) have argued, the

science of loss [...] requires knowledge of three distinct dimensions: (1) what people value highly, how things come to be valued, and how values vary over space and time; (2) the climatic and social drivers of undesirable changes that put at risk things that people value; and (3) should losses arise, the means and extent to which suffering can in turn be minimized.

Our phenomenological approach contributes to the first dimension of the science of loss by making sense of what is lost from climate change through a *phenomenology of loss*. Finally, (iii) we present a novel application of phenomenological theory to geographical questions. Whereas most geographers might consider phenomenology to be the study of *present* subjective experience, we introduce phenomenological approaches to the debate which facilitate an understanding of experiences of *absence*.

More broadly, we argue that phenomenology helps provide a coherent account of the heterogeneous nature of experiences of climate change, as different people and places are impacted in different ways at different times (see Tschakert et al., 2019; Warner and Van der Geest, 2013; for a phenomenological approach to climate change focussing on different perceptions of time, see Schnegg, 2023). In some shape or form, loss is a universal experience in light of climate change, ranging from loss of place and identity to the loss of hope for a liveable future and the climate anxiety thus induced. Phenomenology does not render all these experiences equal, nor does it obfuscate the importance of assigning responsibility for L&D. Instead, phenomenology simply helps makes sense of a *shared climate reality* that is changing. Sustaining this sense of a shared climate reality is, we argue, essential for communicating and adapting to future climate change.

Our argument will proceed by first recounting the L&D debate within which the question of what is lost from climate change becomes most conspicuous in climate science, politics, and governance. Having flagged what gap phenomenology might help fill in this debate with respect to *loss*, we go on to develop a phenomenology of climate’s presence and of the absences generated from changing climates. To account for climate’s presence, we will turn to Heidegger’s ([1927] 2010) *Being and Time* and Watsuji’s ([1935] 1961) *Fūdo* and to account for absence to Waldenfels’ ([2006] 2011) *Phenomenology of the Alien*. We conclude by highlighting the potential of phenomenology for future research in climate change adaptation.

2 The debate around loss and damage from climate change

The question of what is lost and what is damaged due to anthropogenic climate change – past, present, and future – has become one of the focal points of research around climate change impacts and in climate science policy (Mechler et al., 2020; Thomas et al., 2020). Over the past three decades, L&D has emerged as a key concept – first in the political arena and increasingly also in the scientific sphere – to capture adverse effects of climate change at the “adaptation frontier” (Tschakert et al., 2017:1). In particular over the past decade, scholarly engagement with L&D increased considerably (McNamara and Jackson, 2019).

2.1 The political origins of the term loss and damage

The term “loss and damage” emerged in early climate negotiations that sought to establish the United Nations Framework Convention on Climate Change (UNFCCC), when Vanuatu, on behalf of the Alliance of Small Island States (AOSIS), requested the inclusion of an insurance pool to compensate for loss and damage from sea-level rise (INC, 1991). Over time, L&D became a political combat term in UNFCCC negotiations to demand compensation and recognition of liability and historical responsibility (see also Vanhala and Hestbaek, 2016). Even as losses and damages are arguably the area where the impacts of climate change are most acutely felt, these political origins of L&D explain why no universal definition exists under the UNFCCC (Boyd et al., 2017; Calliari et al., 2020).

The notion of L&D is still characterised by political conflict which perpetuates conceptual ambiguity around L&D within and beyond international climate negotiations. In a thorough analysis of L&D politics, Calliari et al. (2020) make sense of the intricate L&D debate and identify five key “areas of contention”, revolving around compensation claims, the legal status of L&D under the UNFCCC, questions of responsibility and accountability, technical vs. political problem framings, and the blurry relationship of L&D with other hot topics in the UNFCCC space. These findings illustrate that even a decade after L&D became institutionalised through the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (WIM) in 2013 and further formalised through Article 8 of the Paris Agreement in 2015 – and even as political agreement was reached to establish funding arrangements for L&D at the UNFCCC’s 27th Conference of the Parties (COP27) in 2022 (UNFCCC, 2022) –, conceptual, political, and practical uncertainties remain (see also Doelle and Seck, 2020; Thomas et al., 2020).

Despite ongoing political challenges in defining the very nature of L&D, Mechler et al. (2020:1250) find that the “science perspective on L&D is maturing”. This is evidenced by the inclusion of the term “losses and damages” in the Summaries for Policymakers (SPMs) of the recent Working Group (WG) II and III contributions to the Sixth Assessment Report (AR6) by the Intergovernmental Panel on Climate Change (IPCC). In the AR6 WGII SPM, the term losses and damages “refers to adverse observed impacts and/or projected risks and can be economic and/or non-economic” (IPCC, 2022:7).

2.2 The loss and damage spectrum

That the concept of L&D means different things to different stakeholders in the L&D space is further evidenced by Boyd et al. (2017), who identify a spectrum of four key perspectives on L&D. While partly overlapping, the perspectives differ on spatial, temporal, and conceptual scales (Boyd et al.,

2017:724). Boyd et al.’s (2017) typology continues to influence conceptual approaches to L&D, as exemplified in Chapter 17 of the IPCC AR6 WGII report.

The first perspective, on one end of the spectrum and closest to common understandings of climate adaptation, sees L&D as part of existing adaptation and mitigation efforts (Boyd et al., 2017:723). The second perspective understands L&D as an “opportunity to work towards comprehensive risk management” approaches, *inter alia*, in the context of disaster risk reduction (DRR) (Boyd et al., 2017:724). Moving along the spectrum, further away from existing adaptation and mitigation approaches, the third perspective views L&D as limits to adaptation, a notion already mainstreamed in climate science (Boyd et al., 2017:725). On the far end of the spectrum, most distant to traditional climate adaptation approaches, L&D is understood as an existential threat, pointing to the urgency of climate change by placing “an emphasis on irreversible loss, non-economic losses (NELs), justice and responsibility” (Boyd et al., 2017:725).

2.3 Limits to adaptation and non-economic loss(es)

Calliari and Vanhala (2022:2) recently note that “[c]urrent scholarly understandings of L&D often emphasize the unavailability and irreversibility of certain climate change impacts and the role played by constraints and limits to adaptation as drivers of adverse outcomes (Mechler et al., 2020)”. As Mechler et al. (2020) suggest, more and more evidence is emerging on soft and hard adaptation limits in terms of L&D. From a climate science perspective, they further point out that “[t]here is consensus that L&D refers to adverse climate-related impacts and risks from both sudden-onset events, such as floods and cyclones, and slower-onset processes, including droughts, sea-level rise, glacial retreat, and desertification” (Mechler et al., 2020:1246).

Associated risks from such L&D events can be both economic and non-economic (Mechler et al., 2020:1246–1247), with a particular emphasis on the latter, often neglected, category of NELs. In 2014, the UNFCCC Secretariat commissioned a technical paper that defined NELs as the “remainder of items that are not economic items” (Fankhauser et al., 2014:3). NELs function as an “umbrella term for climate change-related losses of items that are not traded in markets” (Serdeczny et al., 2018:7). This illustrates that NELs have been defined *ex negativo* with respect to economic losses.

Under the UNFCCC, NELs have come to encompass losses to individuals (life, health, and human mobility), to society (territory, cultural heritage, Indigenous knowledge, and societal and cultural identity), and to the environment (biodiversity, and ecosystem services)¹. The WIM Executive Committee (ExCom) considers NELs a “strategic workstream”

with specific tasks and goals. The WIM ExCom has also established a dedicated expert group on NELs to support its work (Johansson et al., 2022:2). Nonetheless, the nature of non-economic losses and damages remains elusive.

2.4 Phenomenology at the “limits to adaptation”

Tschakert et al. (2019:62) try to make sense of the “slightly more than one-thousand ways to experience harm” from climate change by developing a framework to categorise loss. Aspects of loss based on the “[l]ived experiences of climate-related, intangible harm” (Tschakert et al., 2019:62) include one’s sense of place, ways of knowing, and the expectation of order in the world.

Where previous work on the science of loss, such as Tschakert et al. (2019), grounded their approach in the lived experiences of climate change, we turn to phenomenological theory in order to provide a possible framework to help make sense of these lived experiences and render them better legible. Instead of using NELs as an “umbrella term” to define losses *ex negativo* with respect to economic losses, we then present an account of loss based on a phenomenology of climate’s presence and of the absences generated from climate change. Our account will focus on the most intangible existential losses at the very limits to adaptation, where, we argue, phenomenology can make the greatest contribution.

3 Climate’s presence

A phenomenology of loss from climate change requires a brief introduction to the phenomenological method itself. This is of particular import in geography, where phenomenology has taken on a distinct meaning in the wake of humanistic geography (Seamon and Larsen, 2020; on the absence of phenomenology from German geography, see Hasse, 2017). Our introduction of phenomenology proceeds in three steps: first, we detail our phenomenological approach in contrast to those interpretations of phenomenology dominant in the social sciences. We then consider how our approach responds to difficulties that arise in conceptual accounts of (experiences of) climate change. Finally, we model a phenomenological approach to climate’s *presence* on the basis of Heidegger’s concept of “being-in-the-world”. Reflecting on climate’s presence then functions as a foil for an account of the *absences* generated from climate change, *i.e.* existential loss from climate change.

3.1 Phenomenology: a new “sort of objectivity”?

Following a dominant interpretation of phenomenology in the social sciences, one might expect a phenomenological approach to begin with immediate, subjective experience. This expectation is particularly strong in geography, given the introduction of phenomenology into human geography as a response to positivism under the heading of “humanistic ge-

¹UNFCCC: non-economic losses, <https://unfccc.int/wim-excom/areas-of-work/non-economic-losses>, last access: 30 January 2023.

ography” (see also Relph, 1970; Tuan, 1976; Seamon and Larsen, 2020; Kinkaid and Hepach, 2023). From this vantage point, a phenomenology of loss would mean an account or catalogue of (individual) experiences of losses from climate change (for an excellent overview of the lived experiences of L&D, see Tschakert et al., 2019:63–65).

However, such an approach would commence from a one-sided understanding of phenomenology. As other geographers were quick to point out when phenomenology was first introduced into geography (Billinge, 1977; Pickles, 1985), Husserl’s ([1936] 1970) phenomenological critique of science and the turn to the everyday life-world of experience is *not* equivalent to the (uncritical) embrace of subjective experience, even as the concept of the life-world came to be influential in humanistic geography.

The object of phenomenological analysis is “a completely different sort of waking life” from “normal, straightforward living, toward whatever objects are given” (Husserl, 1970:§38, 144). Instead of directing their attention to immediate, subjective experience, the phenomenologist takes a step back, concentrating on “manners of givenness” (Husserl, 1970:§38, 144), i.e. on experience’s “howness”.

Directing phenomenological attention to humanistic geography’s interest in immediate, subjective experience in this way, one might reflect on how the very distinction between “objective”, positivist science and “subjective”, personal experience is itself premised on a positivist understanding of “objectivity”. Instead of rejecting objectivity, Husserl (1970:§3, 7) calls for a different, phenomenological “*sort* of objectivity”. This different “sort of objectivity” would not, for instance, take a dichotomous understanding of objectivity and subjectivity for granted but would instead question the validity of this dichotomy with respect to experience’s manners of givenness. To call experience “subjective” would mean to buy into the very distinction Husserl’s phenomenological approach seeks to undo.

3.2 Applying phenomenology to (loss from) climate change

Questioning quantitative approaches as the only viable “sort of objectivity” helps, for instance, recognise that “there are many more phenomena that people value that are at risk from climate change, but that are overlooked because they cannot be captured by standard metrics” (Barnett et al., 2016:977). Phenomenology, as we will go on to show, helps make sense of these phenomena that escape “standard metrics” (see also Schnegg, 2021).

Whereas other approaches might answer the question of what is lost by either (i) *assessing* past and future losses according to a given paradigm, such as economic losses, or by (ii) *cataloguing* the different possible *types* of losses, including economic *and* non-economic losses, a phenomenological approach (iii) seeks to trace experiences and types of losses back to the manners of givenness from which they emerge.

From both a political and phenomenological point of view, existential losses might be viewed as primary as opposed to other forms of loss; they are the very reason why L&D come to matter in the first place.

Aside from our particular interest conceptualising loss from climate change, this turn toward phenomenology responds to a wider debate in climate social science around the nature and experience of climate change. Whilst anthropogenic climate change is a virtual scientific certainty, the nature of climate change’s presence in experience is less so (on climate change’s “invisibility”, see Morton, 2013; Rudiak-Gould, 2013; Knox, 2020).

To complicate matters further, it is difficult (and perhaps impossible) to disentangle climatic, environmental change from the social and economic context in which it is embedded (IPCC, 2022:12; see also Tschakert et al., 2019:69). Consequently, “climate-oriented explanations” (Ribot, 2018:2019) that conceptualise climate as a physical object distinct from the social or cultural have been critiqued as “ontologically inaccurate” (Nightingale et al., 2019:344). One must instead “radically rethink the scientific method” (Nightingale et al., 2019:345) in order to do justice to the plural ways of knowing climate itself (see also Hulme, 2017). Todd (2016), Whyte (2017), Bawaka et al. (2020), and Sultana (2022) have called particular attention to the legacies of colonialism inscribed in dominant, (social) scientific modes of knowing climate.

3.3 Being-in-climate

Both climate science and approaches more attentive to the heterogeneity of knowing and experiencing climate and its changes – *ontologically pluralist* approaches (see Heywood, 2017) – share a scepticism concerning the possibility of a phenomenology of climate: the former because climate change is measured and modelled, not experienced, and the latter because there is no universal, shared object “climate” which everyone experiences as changing or otherwise. The goal of a phenomenological account is to unearth the underlying manners of givenness which afford different and distinct experiences of climate, no matter the ontology (for alternate phenomenological approaches to climate, see also Kirkman, 2007; Knebusch, 2008; Hepach, 2022; Schnegg, 2023).

Before we outline our phenomenological account, it is important to acknowledge Indigenous accounts of climate change in particular so as not to “advance and consume arguments that parallel discourses in Indigenous contexts without explicitly nodding to them” (Todd, 2016:8). There are a number of parallels one could draw between the phenomenological account to follow and, for instance, the Yolngu songspiral Bawaka et al. (2020) detail. From a feminist new materialist perspective, Neimanis and Walker (2014) and Verlie (2017) coin the terms “weathering” and “climating” respectively, and their arguments, at times, run in paral-

lel to our phenomenological account, even as Neimanis and Walker (2014:562) are critical of phenomenologies of climate. Although beyond the scope of this paper, we return to this work in the conclusion.

3.3.1 The presence of things

We model a phenomenological account of climate and its changes after Heidegger’s ([1927] 2010) account of being-in-the-world from *Being and Time* (for other applications of Heidegger’s thought to questions of environment, weather, and climate, see Ingold, 2002; Vannini et al., 2012; Hepach, 2018; Schnegg, 2019, 2021; on the “poison” of Heidegger’s thought in geography, see Korf, 2014).

Heidegger too sets out to question taken-for-granted dichotomies, such as the distinction between the objective and subjective laid out above. Responding to a long-standing philosophical problem, Heidegger ([1927] 2010:§13, 58) turns the question of how one has access to the outside world on its head: it is simply not the case that objects are there *first* in order to then be encountered. Objects are “not ‘initially’ merely objectively present ‘world-stuff’” (Heidegger, [1927] 2010:§18, 80). Reiterating an earlier argument, this understanding of the nature of objects is premised on a positivist construal of experience; “an unexpressed anticipatory ontological characterization is contained in addressing beings as ‘things’ (*res*)” (Heidegger, [1927] 2010:§15, 63).

Turning to the manner of givenness of “objects”, Heidegger argues that they are, first and foremost, not given as standalone objects detached from any context. The “closest kind of association” with things “is not mere perceptual cognition” – seeing some object “over there” – “but rather, a handling, using, taking care of things which has its own kind of ‘knowledge’” (Heidegger, [1927] 2010:§15, 63). “Objects” of experience are hence, in the broadest sense, “useful things” (Heidegger, [1927] 2010:§15, 64) first; i.e. they are encountered and discovered in distinct contexts of meaning or, to use Haugeland’s (2013a:7) turn of phrase, in a “referral nexus of significance”. This nexus or the “totality of useful things is always already discovered *before* the individual useful thing” (Heidegger, [1927] 2010:§15, 64).

3.3.2 Circumspection and disclosure

Heidegger ([1927] 2010:§15, 65) calls the way in which one is always already embedded in a context, nexus, or “totality of useful things” “circumspection”. Instead of looking at individual objects scattered around us, Heidegger argues one encounters objects *first and foremost* in a circumspect way, i.e. within a referral nexus of significance. Things do become individuated and “discovered as purely objectively present” (Heidegger, [1927] 2010:§15, 67) when circumspection is interrupted, i.e. when a thing no longer fulfils its “use” or when the referencing which sustains circumspection fails.

As Dreyfus (1991:70–71) explains, when an

ongoing activity is held up, new modes of encountering emerge and new ways of being encountered are revealed. When something goes wrong with my hammer, for example, I am forced to attend to the hammer and the hammering. According to Heidegger three modes of disturbance – conspicuousness, obstinacy, and obtrusiveness – progressively bring out both Dasein as a thoughtful subject and occurrence as the way of being of isolated, determinate substances.

The “helpless way in which we stand before” a thing “objectively” present in this way highlights, for Heidegger, that “objective presence” is “a deficient mode of taking care of things” (Heidegger, [1927] 2010:§16, 69). Consequently, scientific inquiry into the nature of objects is premised on objects first turning conspicuous within a primordial referral nexus of significance.

The primacy of circumspection, of one’s “familiarity with the world” (Heidegger, [1927] 2010:§16, 71) before any individual object is encountered, means that the world is always already *disclosed* to oneself in a distinct way, opening up distinct contexts of meaning. As Haugeland (2013b:17) summarises, “[i]ntraworldly entities can be discovered only because of or in terms of a prior disclosedness; disclosedness *makes discoveredness possible*”. One only becomes aware of this disclosure, of one’s reliance on circumspection, when something is no longer “of use”. What turns conspicuous in such moments is not only the object turned obtrusive but the very system of reference in which it was embedded. “So disturbances have the effect of exposing totalities of involvements and, therefore, worlds” (Wheeler, 2020).

What binds one’s world together in this way is a *relevance* which “is ‘earlier’ than any single useful thing” (Heidegger, [1927] 2010:§18, 78). Relevance is a sort of *disclosive force* which has its own limit and origin, namely the “for-the-sake-of-which” (Heidegger, [1927] 2010:§18, 78) that makes things relevant. According to Heidegger, the ultimate reference point for the referral nexus of significance is *Dasein*, i.e. the persons for the sake of whom things are relevant and useful (on the meaning of Dasein, see Haugeland, 2013a).

3.3.3 Climate’s (ir-)relevance

In Heidegger’s account, disturbances in one’s everyday involvement and interruptions in everyday circumspect living lead to moments of reflection. In these moments, two aspects of experience shine forth, which usually remain transparent: the *individual* objects bound up in the referral nexus of significance and the *totality* of referentiality itself. Hence, such moments give one pause to reconsider *both* the adequacy, relevance, or usefulness of a particular object *and* the for-the-sake-of-which by which referentiality itself is being sustained.

However, relevance is not only moored to objects and persons. There is a further element governing relevancy or governing the manners of givenness of both objects and persons: *climate*, as Heidegger ([1927] 2010:§22, 96) comes close to acknowledging in his account of existential spatiality. Differences in climate mean differences regarding which objects, practices, routines, etc. are relevant or “useful”. In his work on *phenomenological climate*, *Fūdo*, Watsuji ([1935] 1961) critiques Heidegger’s account on the grounds that it pays too little attention to the spatial embeddedness of one’s being-in-the-world. However, he shares Husserl’s and Heidegger’s scepticism towards “scientific objectivity”, questioning “whether the phenomena of climate are in essence objects of natural science” (Watsuji, [1935] 1961:1).

Watsuji ([1935] 1961:4) draws attention to the fact that when we experience meteorological phenomena, such as “being cold”, it is not as though one infers “being cold” from an experience of the cold outside oneself. Instead, one’s circumspect being-in-the-world is always already embedded in a distinct climate with its characteristic weather. “Being cold” is then experienced as a moment of interruption in one’s circumspect living; one discovers or encounters oneself as *always already weathered by and acclimatised to a certain place* (for recent Indigenous work on this question, see also Watt-Cloutier, 2018; Hobart, 2023). Attempts to “objectively” measure weather and climate are then based on this primary, existential exposure to weather and climate – being-in-climate.

When climate turns obtrusive, its relevance called into question, then it does so in a different way than objects do. One is not confronted with something that is suddenly “objectively present”. Instead, climate’s obtrusiveness has the character of *unfamiliarity* – the hallmark of extreme weather events in the face of climate change. What is unfamiliar is not some object but the whole way in which the world, with its objects, is given. As climates change, the very referral nexus of significance, which grounds and sustains one’s meaningful engagement with the world, becomes unmoored. It is this fundamental and existential aspect of climate change that Heidegger’s thought helps highlight.

4 Climate’s absences

Returning to the original question of what is lost from climate change, a phenomenological approach helps focus on *where* existential losses take place: not only in the loss of objects or territory “out there” but at the very site of one’s comprehension of the world.

4.1 Waldenfels’ phenomenology of the alien

To provide an account of the phenomenology of absence which aids in understanding the phenomenological nature of existential loss from climate change, we turn to Waldenfels’ ([2006] 2011) work on the phenomenology of the alien

(for another application of Waldenfels’ theory to climate change, see Schnegg, 2023; on the phenomenology of loss of another, see Fuchs, 2018).

Central to Waldenfels’ thought is the insight that the referral nexus of significance drawn out above is itself not primary. Instead, it emerges as a *response* to something (Waldenfels, 1998:43). All meaning and experience is marked – to varying degrees – by *responsivity*, i.e. by having their origins in something preceding them. This opens up a “responsive difference” (our translation; Waldenfels, 1998:44) between meaning or experience on the one hand and that which preceded them on the other. This difference cannot be bridged or overcome. To make sense of experience, or to answer the most basic question of *why* something has a certain meaning, means to continuously play catch-up to this time lag. All experience and meaning is then haunted by the spectre of the alien which marks an absence that is, at times, more or less acutely felt. So how does one then make sense of the alien, of loss, when it categorically escapes the possibility of present experience?

In Waldenfels’ view, the phenomenological nature of the alien, i.e. its manner of givenness, is often simply erased. He coins the term “regulatory apparatuses” to describe the mechanism which “swallows” (our translation; Waldenfels, 1998:45) or smooths over the responsive difference in such a way that the alien is rendered ostensibly familiar or meaningful.

These regulatory apparatuses are constantly at work in the everyday life-world. Following an example Waldenfels ([2006] 2011) chooses, statistics are a particularly powerful way of turning, for instance, “a tragic event [...] into a statistical normality, into an ‘orderly’ event which is endowed with sense and conforms to rules.” In light of the recent Covid-19 pandemic, incomprehensible in its nature and extent to many, one can attest to the comfort that numbers, averages, and the modelling of scenarios bring even as their message remains alarming. Analogously, “meteorological processes” (Waldenfels, [2006] 2011:24), such as extreme weather events, can be rendered comprehensible through weather attribution studies and their assignment of likelihoods, which in turn figure into local adaptation strategies. Finally, even losses from climate change at the limits to adaptation can be rendered familiar or expected through the assignment of economic value and future projected losses.

These examples indicate the particular temporality, the “genuine time lag” (Waldenfels, [2006] 2011:31), inherent in experiences of the alien. Viewed through the lens of a regulatory apparatus, a tragic event and the assignment of statistical likelihood or economic value “do not follow one after the other like two events; they are not even two distinct events, but one and the same experience, shifted in relation to itself” (Waldenfels, [2006] 2011:31). It is, paradoxically, *first* through the response that the *earlier* event registers as meaningful or is raised to awareness.

To reckon with this paradox necessitates a phenomenology of the alien itself, which does justice to the *alien* experience instead of doing the work of a regulatory apparatus by introducing a frame of reference which promises to render alien experiences, such as loss from climate change, familiar. Phenomenologically speaking, absence should not be rendered “present” through frames of reference, such as statistical likelihood or economic value, which distort absence’s manner of givenness. Instead, “each alien experience is located on the hither side of sense and rule” (Waldenfels, [2006] 2011:36) due to the responsive difference between the alien and one’s response to it.² The recognition of this difference means not only to question the supposed “object” of experience (the alien) but equally to rethink what sort of subjectivity is in play on “the hither side of sense and rule”.

Waldenfels ([2006] 2011:28) argues that one must consequently recognise the “subject” of experience as a *patient* and *respondent*, i.e. “not as an initiator but as somebody who is literally subject to certain experiences”. Waldenfels ([2006] 2011:27) refers to what affects someone as *pathos*. To be affected by pathos, as opposed to experiencing some object, means to not be able to point to, let alone know or objectively determine, *what* one was affected by. Pathos precedes the distinction between subject and object. “For this reason, we initially do not encounter pathos as *something* which we mean, understand, judge, reject, or affirm; rather, it forms the time-place *from which* we do all this by responding to it” (Waldenfels, [2006] 2011:31).

4.2 A phenomenology of loss from climate change

Pathos can take on different forms, such as episodic and chronic kinds, with varying degrees of intensity (Waldenfels, [2006] 2011:27). Loss from climate change and global warming more broadly might be distinguished from individual (extreme) weather events along these lines: an individual event can episodically impact a community and come to haunt it for generations, whereas global warming takes the shape of a chronic event, of increases in the intensity and/or frequency of extreme weather events – an ongoing event which continuously rewrites the rules according to which it might be understood. Through a phenomenological lens, climate change appears as a continuously morphing spectre on “the hither side of sense and rule”. Both episodic and chronic experiences of extreme weather and climate change are then not, as Heidegger already helped elucidate, experiences of *something*. Instead, they form the time-place from which one’s being-in-the-world, one’s existential entanglement with the environment, is (continuously) re-figured.

²This line of argument might be particularly surprising to geographers, given geography’s recent turn towards “post-phenomenology” and its critique of phenomenology as “dreams of presence” (see Ash and Simpson, 2016; for a more detailed response to this critique, see Dörfler and Rothfuß, 2018, Kinkaid, 2020, and Hepach, 2021).

Building on Waldenfels’ work, we argue that existential loss from climate change is an alien experience par excellence. To experience such loss does not mean to experience the loss of *something*. Loss is a *pathos* that overwhelms any attempt at meaning-making and categorisation, leading to the ultimate failure of “regulatory apparatuses” that might attempt to do either. To experience existential loss means, through the lens of Waldenfels’ phenomenological theory, to always come too late to something that has already taken place. Experiences of loss are not initiated but responded to. What makes a response to loss particularly difficult is that the very familiar rules and meanings to which one would resort are precisely what are rewritten through loss. In Heideggerian language: the nature of the referral nexus of significance has changed, the world has become existentially unfamiliar.

One aspect of climate change’s particular temporality complicates the phenomenology of loss further. Climate change has, in a significant sense, already taken place; atmospheric processes have been set in motion to which one is forced to respond. Although individual extreme weather events might be episodic, the absences generated from climate change are more chronic in nature; instead of experiencing *something* alien, experience itself turns alien as it becomes unmoored from its climatic context (Waldenfels, [2006] 2011:3).

Crucially, although experiences of loss and damage from climate change are not, in Waldenfels’ model, initiated by *someone*, climate change itself is largely *anthropogenic*; responsibility for climate change can be assigned according to past and present carbon emissions and to the originators of global inequality, which lead some to be more vulnerable and exposed to climate-related losses and damages than others. Equally, although Waldenfels seeks to capture a universal aspect of human experience through his concept of “patient” and “respondent”, empirically, the extent to which one is a patient of and respondent to climate change is heterogeneous.

Reflecting on the anthropogenic nature of climate change in a further dimension, one might ask the following: how are existential losses from *anthropogenic* global warming different from such losses due to *non-anthropogenic* environmental change? At first glance, both losses might look similar. The losses from extreme flooding attributed to climate change might, for instance, be situated within a longer history of so-called “natural disasters”. Attribution of global warming to distinct actors in world history is, however, not only a scientific exercise. There is a phenomenologically available affective dimension to loss from climate change too when experiences of loss are bound up in feelings of anger, helplessness, despair, frustration, impatience, and/or injustice (see also Sultana, 2022; Verlie, 2019).

A phenomenological account of alien experiences, such as loss from climate change, helps conceptualise the nature of the most intangible and immaterial losses across material and affective registers, which are at risk of being overlooked when non-economic losses and damages are subject to quan-

tification. Loss, as others have shown too (Boyd et al., 2017; Tschakert et al., 2019), does not only occur in an “objective world out there”. What is lost from climate change are whole ways of existing and relating to the world, as one’s referral nexus of significance becomes unmoored from the climate in which it was embedded. Following Waldenfels, climate change losses are not only “objects”, *some things* which are lost. Instead loss “forms the time-place *from which*” (Waldenfels, [2006] 2011:31) one can begin to respond to climate change. Losses are shifted in relation to themselves; the moment they are recognised in experience, they reshape the very context from which any meaningful response is made possible. As an experience of the alien, loss is essentially withdrawn from present experience. The existential absence of loss is grounded in the time lag between pathos and response, due to which one is always too late to respond and make complete sense of what is lost from climate change. Making this time lag legible and salient is phenomenology’s promise and contribution to a theory of (non-economic, existential) loss and damage.

5 Conclusions

Our argument set out from the observation that there is much disagreement over what climate and its changes *are, how or if* climate change can be experienced, and *what* exactly the nature of loss from climate change is. A phenomenology of loss, we hope to have shown, provides a possible answer to these questions.

Regarding the nature of loss from climate change, we detailed the nature of existential loss with the help of phenomenological theory, concentrating on the most intangible and immaterial type of loss. We showed that climate change *can* be experienced, namely in becoming unmoored of one’s referral nexus of significance. Making this experience legible required a new, phenomenological “sort of objectivity”.

Returning to the very emergence of L&D as a political combat term through the lens of Waldenfels’ phenomenology of the alien, one might argue that L&D emerged to account for (alien) experiences, such as existential non-economic losses, that were previously incomprehensible. Thus, L&D might be viewed as a response to a challenge of the “regulatory apparatuses” previously governing the international climate change debate and negotiations.

Returning to the question of a shared climate reality, we argue that a phenomenology of loss helps make sense of innumerable experiences of loss from climate change without erasing the differences between them. For instance, a phenomenology of loss helps explain experiences of climate anxiety and doom amongst those who primarily experience loss from climate change at a distance, e.g. through media reports (Clayton, 2020). For them, too, loss entails an experience of having come too late to a change that fundamentally questions one’s future way of life – an experience of

loss in anticipation (Herington, 2017), a “knot in the stomach” (Knox, 2020:6; on *looming*, see Throop, 2022). Turning to the example of recent heatwaves in Europe, a phenomenology of loss brings to the surface experiences of climate change beyond the observation of a rise in temperature or a decrease in precipitation. Such heatwaves signal an existential loss: not just the loss of *something*, but the turning unfamiliar of one’s world.

As the choice of examples above shows, these experiences are closely related to the life-world of the authors. We recognise that in writing about experiences of climate change, we bear a particular epistemic responsibility in light of “colonial science” (Sultana, 2022:12) and its history of (epistemic) violence which erases other ways of knowing (climate). Whyte (2017:154), for instance, has emphasised that “Indigenous peoples often understand their vulnerability to climate change as an intensification of colonially-induced environmental changes”, embedding “present” climate change in a longer history of colonial violence.

Returning to phenomenology in this intellectual climate then begs the following question: does phenomenology simply repeat the “universalization and Eurocentrism” (Sultana, 2022:12) of a distinctly “western” climate knowledge on a conceptual level? In our view, phenomenology cannot replace other ways of knowing climate. Instead, phenomenological reflection facilitates new opportunities and settings for bringing different ways of knowing climate into conversation with each other (see also Schnegg, 2019, 2021, 2023).

We here follow Graeber’s (2015) scepticism concerning a strong interpretation of ontological pluralism. Even though it is impossible, to varying degrees, to understand the experiences and knowledge of another completely, there remains a space for shared moments of understanding and recognition. Such moments already emerge, for instance, in Indigenous geography’s engagement with feminist new materialist approaches to climate change (Bawaka et al., 2020:300; see also Neimanis and Walker, 2014). Phenomenology’s attention to the “manners of givenness” of experience in general and the phenomenology of loss we present in the final section in particular hopefully present one further moment.

Although it is consequently not our place to assess the adequacy of a phenomenology of loss to make sense of Indigenous experiences of climate change, we hope that our phenomenological approach presents a moment of recognition of a shared and changing climate reality. Such recognition can be a starting point for bringing different ways of knowing climate into conversation with each other. Such moments are, as we argued in the Introduction, crucial to communicating the urgency of climate change and L&D in particular across different epistemologies without reducing one epistemology to another. A phenomenology of loss helps render visible and urgent experiences of loss at a remove from one’s own. In light of the ongoing debate around reparative climate justice (Táíwò, 2022), phenomenology helps make

salient losses which escape allegedly more objective assessment approaches.

Future research on (the limits of) climate change adaptation might spell out the phenomenology of loss in more detail, both theoretically, drawing from other phenomenologists such as Maurice Merleau-Ponty or Emmanuel Levinas, and empirically. How is loss from climate change experienced in one’s own body and in and through the bodies of others? How is one’s understanding of loss, as an alien experience calling into question any ready-made answers, entangled with one’s recognition of and responsibility towards others? These are some of the questions that a phenomenological approach to the science of loss may help raise and answer.

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