

Is climate real?

A phenomenological approach to climate and its changes



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Preface

This thesis is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text. I further state that no substantial part of my thesis has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. It does not exceed the prescribed word limit for the relevant Degree Committee.

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Abstract

The question if climate is real is occasioned by a discrepancy between the increased certainty that climate change is being experienced and the impossibility of experiencing climate (change) according to the very framework which provides the basis for this certainty: climate science. I trace this discrepancy back to a question of realism: What sort of realism is necessary in order to make sense of experiences of climate and its changes? In this thesis, I develop a *phenomenological realism* as a response, which dispels the false dichotomy between ‘objective’ scientific knowledge and ‘subjective’ experience. I do so along three main lines of argument: (i) I turn to the first use of ‘phenomenology’ in Anglo-American geography, namely in Sauer’s *Morphology of landscape*. By reflecting on what occasioned Sauer to turn to phenomenology, I identify a precedent for my question “Is climate real?” in the history of geography. Informed by the theory Sauer draws on, I develop a Sauerian phenomenology beyond what Sauer himself wrote; an incipient phenomenological realism in geography. (ii) I go on to turn to the origin of the very concept of climate itself, namely the Ancient Greek term *klima* [κλίμα]. After highlighting the latent, abstract nature of *klima*, the traces of which extend into our present-day scientific understanding of climate, I undertake a counterfactual etymology. I (re-)construct a concept of climate that *might* have emerged based on a different Ancient Greek term: *hora* [ώρα]. Through a geographical reading of Plato’s dialogues, I develop a first phenomenological account of climate and its changes. Turning to Aristotle’s work on *Metaphysics*, I go on to give further shape to a phenomenological realism by reflecting on what sort of ‘thing’ or ‘being’ climate is. Finally, (iii) I situate my own phenomenological approach in the history of phenomenology in geography. I argue that the introduction of phenomenological theory into human geography as a reaction to positivism has led to a *subjectivistic* or *anti-realist* understanding of phenomenology. Hence, my doctoral project is both to account for the experiential reality of climate and its changes *and*, by example, to detail an alternative geographical approach to phenomenology. I conclude with a re-reading of Husserl’s later work, informed by the phenomenological challenges climate presents one with. In summary, the question if climate is real is not merely philosophical. What one takes to be real inevitably shapes how one makes sense of experience and what is deemed to be possible in the future. Much public discourse around climate change informed by climate science is increasingly concerned with the narrowing down of reality in order to instil a sense of urgency. Here, a phenomenological approach promises to open up new ways of making sense of living in a changing climate.

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Applying the genealogical approach I returned to through-out my doctoral research to my thesis itself, I become aware of the innumerable threads, which are not of my making, that patterned and continue to pattern my thinking and writing.

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1 Introduction

“The science of Geography, which I now propose to investigate, is, I think, quite as much as any other science, a concern of the philosopher [...]” (Strabo, 1917a: 3)

“In both philosophy and science faculties, the geographer is viewed as an alien.”
(Hettner, 1905: 554, translation MH)

Is climate real? The origin of this question, which guides the thesis to follow, points back to my background in philosophy, my present research in geography, and the experiences which accompanied my doctoral research.

At the beginning of my PhD, I set out to apply my phenomenological training to the question of climate and its changes, asking myself how phenomenology might help elucidate experiences of climate change. Reviewing the literature on said experiences in geography and in the Social Sciences and Humanities more broadly led me to conclude that there is great uncertainty around *what* one is experiencing when one experiences climate change, and more principally if such experiences are even possible.

This sense of uncertainty was heightened by the extreme weather events and the responses to them occurring though-out my PhD. Greta Thunberg started her school strike for climate in August 2018, two months before my doctoral programme was set to begin, following a summer heatwave with extensive wildfires in Sweden. 2019, 2020, and 2021 were equally marked by extreme heat, draught, and wildfires across the globe. As I am writing this introduction in Spring 2022, an unprecedented heatwave is gripping Pakistan and India, leading to conditions at the very limit of what is survivable for humans.

Through my own experience in Europe, through the news reports I was reading, through the activism of Fridays for Future and Extinction Rebellion I saw emerge, and through conversations with family, friends, and colleagues, I began to experience and identify an unsettling mismatch—which Chapter 2 will spell out—between the *urgency* with which climate change was increasingly felt and the *inability* to distinguish between experiences of weather and climate.

This inability to distinguish between weather and climate in experience is bound up with the question of *realism*. Rudiak-Gould (2013: 121) coined the term *invisibilism* to render climate science’s particular realism conspicuous, i.e. to make sense of “the gulf between brute, visible reality and climate change”, “crowded with arcane mathematics, high-tech measuring devices, and inhumanly large temporal and spatial scales.” This gulf or the “assertion of the

inability to perceive the climate”, Schneider (2018: 22, translation MH) has gone on to argue, “is closely connected to the scientific definition of the climate.” Along similar lines, Horn (2018: 16) has made the case that

No matter how important, even portentous, scientific *evidence*—as opposed to mere sensory *experience*—is, it comes at a price. The abstraction of climate—in terms of scale and statistics, as well as in its understanding as a “global” entity—has cut the air off from any phenomenal perceptibility, from both an individual and a collective understanding and from the culturally and regionally diverse images, narratives, dreams, observations, and cultural practices that human beings have historically used to come to terms with climate. Global temperatures, along with rising planetary carbon dioxide levels, cannot be felt or seen but only measured and computed as abstract models, broadcast through the media, and discussed as policy issues “out there.” We relate to climate change mostly as externalized “facts.” (Horn, 2018: 16)

Over the course of the arguments to follow, I develop a different, a phenomenological realism which allows one to relate to climate and its changes in an alternate way, namely experientially. I thereby counteract the “demotion of a phenomenology of climate” (Schneider, 2018: 22, translation MH) through climate science.

In calling attention to the realm of experience, which is neglected or obscured through what one might broadly call a ‘positivist’ approach, I repeat a form of critique that is familiar to geographers. Humboldt and Sauer defended the reality of landscape (and climate) present in experience against the argument that no universal criteria can be named according to which landscapes might be delimited (see Chapter 3). More recently, humanistic geography’s founding moment is its opposition to positivism in human geography (see Chapter 5).

I argue that in these historical moments, an incipient phenomenological realism announces itself as geographers face difficult philosophical problems concerning the nature of the objects they study, in particular landscape and climate. Climate presents a greater difficulty because it is apparently, to use Schneider’s (2018: 39) term, *an-aesthetic*. If phenomenology, in its most general form, means to ‘return to the things themselves’, the question arises what precisely the ‘thing’ might be to which a phenomenology of climate should return.

Simply (re-)turning to experience in a post-positivist, humanist gesture is hence insufficient. A phenomenology of climate must first conceptually develop the very object of its study, it must account for what it means for climate to be real. I do so along three main lines of argument. In Chapter 3, I turn to the first use of ‘phenomenology’ in Anglo-American

geography, namely in Sauer's *Morphology of landscape* (henceforth also *Morphology*). By reflecting on what occasioned Sauer to turn to phenomenology, I identify a precedent for my question "Is climate real?" in the history of geography. Informed by the theory Sauer draws on, namely Goethe's phenomenology of the concept, I develop a Sauerian phenomenology beyond what Sauer himself wrote; an incipient phenomenological realism in geography.

Where I focussed on the origin of 'phenomenology' in geography in Chapter 3, in Chapter 4 I turn to the origin of the very concept of climate itself, namely the Ancient Greek term *klima* [κλίμα]. After highlighting the latent, abstract nature of *klima*, the traces of which extend into our present-day scientific understanding of climate, I go on to undertake a counterfactual etymology. I (re-)construct a concept of climate that *might* have emerged based on a different Ancient Greek term: *hora* [ώρα]. Through a geographical reading of Plato's dialogues, I develop a first phenomenological account of climate and its changes (see also Hepach, 2022). Turning to Aristotle's work on *Metaphysics*, I give further shape to a phenomenological realism by reflecting on what sort of 'thing' or 'being' climate is.

Finally, in Chapter 5, I situate my own phenomenological approach in the history of phenomenology in geography. I argue that the introduction of phenomenological theory into human geography as reaction to positivism has led to a *subjectivistic* or *anti-realist* understanding of phenomenology (see also Hepach, 2021). Hence, my doctoral project is both to account for the experiential reality of climate and its changes *and*, by example, to detail an alternative geographical approach to phenomenology. I conclude the chapter with a re-reading of Husserl's later work, informed by the phenomenological challenges climate presents one with.

By way of concluding, I argue for the necessity of a phenomenological realism in the face of climate change. Such a realism does justice to both the heterogeneity of experience and the universality of reality. It questions the false dichotomy between the universal knowledge of climate science and the ontological plurality of individual experiences of climate and its changes. It makes anthropogenic climate change legible without universalising particular forms of knowing. Hence, although it takes a large amount of theoretical work to develop and get to an initial understanding of a phenomenological realism with respect to climate and its changes—work I undertake in this thesis—, the question if climate is real is not merely philosophical. What one takes to be real inevitably shapes how one makes sense of experience and what one deems to be possible in the future. Where much public discourse around climate change informed by climate science is increasingly concerned with the narrowing down of reality in order to instil a sense of urgency, through 'external facts' such as deadlines, thresholds, and tipping-points, a

phenomenological approach promises to open up new ways of making sense of living in a changing climate.

2 Where is climate?

The aim of this chapter is to introduce the problem a phenomenological approach to climate and its changes responds to. To exemplify the problem, I locate climate by pursuing four different paths of inquiry. In its own way, each path addresses the relation between experience and scientific knowledge with regards to climate and its changes. As my discussion will show, this distinction between experience and knowledge is closely related to the assumption that weather and climate are to be distinguished on the grounds that one is an object of experience, whereas the other is an object of scientific knowledge. One consequential result of this dichotomisation is that experiences of climate and its changes are rendered impossible. The overall goal of the phenomenological arguments in the following chapters is to resolve this dichotomy, to offer an account of the experiential reality of climate and its changes.

2.1 Climatic certainties

Starting out on my first path of inquiry, I begin with a brief reflection on the nature of *certainty* and its relation to climate (change) (see also Chakrabarty, 2018: 32). It is, generally speaking, as Wittgenstein (1969: N. 4) explains in *On Certainty*, difficult to imagine what it would take to question the reality of something we are certain of: “Can I doubt it? Grounds for doubt are lacking! Everything speaks in its favour, nothing against it.” (Wittgenstein, 1969: N. 4)

Wittgenstein wrote extensively on the question of certainty, as he was puzzled by the fact that we do not know *why* we are certain of the things we are most certain of. We are not certain of things, such as that “this mountain existed long before my birth” (Wittgenstein, 1969: N. 85), because their certainty was somehow shown or proven to us. In the case of climate, as Hulme (2015; 2017) notes, it is not even clear *what* we would be shown.

This needs saying right from the start: *climate is hard to place and even its existence is questionable*. It seems to be everywhere (Can you escape from climate? Is anywhere on Earth climate-less?) and yet it is nowhere (Can you point to climate or take me to see it?). People seem to know intuitively what climate is and yet they struggle to articulate an adequate definition of it. (Hulme, 2017: 1, emphasis MH)

According to Wittgenstein, our certainty in such things does not arise from us having somehow checked them, but from a broader “picture of the world” that forms the “inherited background against which [we] distinguish between true and false.” (Wittgenstein, 1969: N. 94) That *everything* speaks in favour of certain things means that *what* we are certain of forms the basis from which *anything else* becomes comprehensible. Consequently, we never consciously learn the individual things we are certain of, as they are the very basis for learning anything at all.

[A child] doesn’t learn *at all* that that mountain has existed for a long time: that is, the question whether it is so doesn’t arise at all. It swallows this consequence down, so to speak, together with *what* it learns. (Wittgenstein, 1969: N. 143)

Of course, we do learn more *about* those things of which we are certain. We can

discover them subsequently like the axis around which a body rotates. This axis is not ‘fixed’ in the sense that anything holds it fast, but the movement around it determines its immobility. (Wittgenstein, 1969: N. 152)

The things about which we are certain constitute “a form of life” (Wittgenstein, 1969: N. 358; on forms of life in philosophy, see also Jaeggi, 2018; on forms of life in geography, see also

Vidal de la Blache, [1922] 1926) and forms of life turn their corresponding certainties immobile. Climate, I argue, is such a certainty that forms the basis of our very forms of life.¹ As Hulme (2017: 1-2) notes,

Climate appears to be a necessary invention if people are to make sense of the world in which they live. [...] The idea of climate connects material and imaginative worlds in ways that create order and offer stability to human existence. People could not live without their climate.²

2.1.1 Moving mountains, changing climates

In his writings on certainty, Wittgenstein gives much thought to what it would mean to deny the things we are certain of, such as mountains predating one's birth, or perhaps our "visceral trust in earth, sky, life and water" (Clark, 2010: 5). Doubts about certainties, Wittgenstein (1969: N. 281) writes, "would seem to me madness". As certainties form the very basis of our forms of life, doubting them does not mean being mistaken, but being 'out of this world': doubts in certainties are incomprehensible. In one thought-experiment, Wittgenstein imagines people coming into his room, declaring the opposite of what he thought to be certain: that he was not living in England. Imagining himself in this room, Wittgenstein writes: "I suddenly stood there like a madman alone among people who were all normal, or a normal person alone among: madmen?" (Wittgenstein, 1969: N. 420)

Although we are certain of climate's reality in one sense, climate has also become a two-fold site of uncertainty, independent of any philosophical inquiry. In the case of climate, a sense of madness may befall us not because people have come into our rooms in order to convince us of an alternate reality—although institutionalised climate change denial may be characterised in this way (Oreskes and Conway, 2010)—, but because climates, as axis around

¹ As the teenage climate activist Jamie Margolin notes regarding climate change: "When adults ask her, as they often do, when she first became worried about climate change, Margolin has a go-to answer: Climate change, she explains, is like Beyoncé. When you're a member of her generation, both are *facts of life, things you just know, fundamental to the way the world functions*. 'There was definitely a time when I first heard of climate change,' Margolin told me, just as she 'wasn't birthed knowing about Beyoncé.' But in neither case can she remember a moment of first awareness. For her and her peers, Beyoncé has simply always existed. And so has the fear of growing up and making a life in a world rendered unrecognizable by climate change." (Jarvis, 2020: emphasis MH)

² Knebusch (2008) compares our dependence on climate with our dependence on time: "What would happen if I could no longer *lean* on time? How would I experience time if it would no longer be *bearing* myself? if I could no longer *rest* in and on seasons?"

which our forms of life have evolved, have begun to shift due to climate change.

This shift is, in a first instance, *material*. As Hulme notes, a “disturbance to the stability of physical climate, whether real or perceived, has a disconcerting effect on the human sense of security and well-being, both materially and emotionally.” (Hulme, 2017: 147) This shift in climate is, however, *conceptual* as well. Climate change, Colebrook (2012: 30) argues, is “not only a *mutation* of this climate (warming, depleting, becoming more volatile) but an *alteration* of what we take climate to be.” Climate is no longer “a territorializing principle of place, of environment, of a culture’s situatedness in nature and nature’s gentle force within culture, a sense of seasonal cycles, of repetition and stability” (Horn, 2018: 13). Rather, material and conceptual changes in climate mean climate has become a twofold “medium of dislocation” (Horn, 2018: 22; on the confusing ‘substance’ of climate (change), see also O’Reilly, 2018).

Taking Wittgenstein’s analysis of certainties seriously, this shift then not only entails a changing material reality—an increase in the global concentration of carbon dioxide in the atmosphere, changes to local temperature, precipitation, sea-level etc.—, but a change to the very comprehensibility of our world which ‘stops making sense’ as one certainty which holds together forms of life shifts below (or above?) our feet.

Ghosh diagnoses an imaginative failure in our inability to contemplate climate change: the “relative climatic stability of the Holocene” (Ghosh, 2016: 8) has lured us into a false sense of regularity, a regularity into which we have bought in because it forms the axis around which “bourgeois life” (Ghosh, 2016: 21) turns. The “bourgeois belief in the regularity of the world”, in the face of climate change, has “been carried to the point of derangement” (Ghosh, 2016: 36), to the point where it is incomprehensible to hold on to it. This mass delusion is what Ghosh calls the “Great Derangement” (Ghosh, 2016: 11).

In light of Ghosh’s clear-sightedness, the following encounter with his mother he relays is as revealing as it is honest. After having

learned, from a World Bank report, that Kolkata is one of the global megacities that is most at risk from climate change; equally shocking was the discovery that my family’s house, where my mother and sister live, is right next to one of the city’s most threatened neighborhoods. (Ghosh, 2016: 53)

Concerned about his mother’s ability to ‘adapt’ to this risk, Ghosh decided to talk to her about moving:

I tried to introduce the subject tactfully, but it made little difference: she looked at me as

though I had *lost my mind*. Nor could I blame her: it did seem like *lunacy* to talk about leaving a beloved family home, with all its memories and associations, simply because of a threat outlined in a World Bank report. (Ghosh, 2016: 53, emphasis MH)

He “suddenly stood there like a madman alone among people who were all normal, or a normal person alone among: madmen?” (Wittgenstein, 1969: N. 420) Ghosh concludes that “contrary to what I might like to think, my life is not guided by reason; it is ruled, rather, by the inertia of habitual motion.” (Ghosh, 2016: 54) But Wittgenstein teaches us that this inertia is not due to a lack of reason: The inertia of our forms of life and the corresponding certainties that develop are the very ground upon which we begin to reason. Going against this inertia would, in view of Wittgenstein, be madness. Still, the consequences of this insight for (individual) climate action are bleak:

This is indeed the condition of the vast majority of human beings, which is why very few of us will be able to adapt to global warming if it is left to us, as individuals, to make the necessary changes; those who will uproot themselves and make the right preparations are precisely those obsessed monomaniacs who appear to be on the borderline of lunacy. (Ghosh, 2016: 54, emphasis MH; see also Norgaard, 2011; on the necessity of a phenomenology of (climate change) denial, see also Kirkman, 2007: 33)

Ghosh’s encounter with his mother is a variation on a theme which will reoccur through-out this chapter: the drifting apart of experience and scientific knowledge, of lived reality and the insights compiled in reports on climate change.

2.1.2 Future climates

Following on from this Wittgensteinian reading of Ghosh, future climates will be changed and uncertain both materially and ideationally. Hulme (2017: 152) argues that climate, then, loses its very function, namely to “stabilise relationships between weather and culture”.

The Anthropocene suggests the possibility of such stability is a chimera. Climate can no longer be helpful as an idea that sits between weather and culture because weather and culture are fusing into a single reality with no independent mediator [...]. [...] Rather than being useful as an imaginative way of, first, separating weather and culture and, then, of stabilising relationships between them, climate may become a zombie concept (Beck and Beck-Gernsheim, 2002)—an idea which is apparently dead, but which continues to ‘live-on’ through its intellectual and imaginative legacy. Metaphorically speaking, the

climate of the Anthropocene is becoming climate-less. (Hulme, 2017: 152)

Instead of clinging on to climate as an untimely Holocene certainty and its corresponding ways of life we may, extrapolating from Hulme's argument, need to let go of both or risk crossing the 'borderline of lunacy'.

However, in view of the anthropogenic nature of climate's changes, climate appears to be a Wittgensteinian certainty par excellence; *a certainty that both produces and is produced by forms of life*. Anthropogenic climate change and the ensuing Anthropocene then do not make climate obsolete, but rather offer a "moment of recognition" (Ghosh, 2016: 4; see also Malm, 2018: 18) in which we recognise climate as a *shifting axis* around which our changing lives turn: "Perhaps even the mere possibility of climate change menaces us precisely because it forces us to be aware of our dependence on the climate even as it calls the future of that dependence into question." (Kirkman, 2007: 31)

Hulme details two further "imaginative stance[s]" (Hulme, 2017: 149) that one can assume facing changing climates, apart from the spectre of 'climatelessness'. One may choose to "re-secure climate through some combination of governmental, technological, social or personal transformation" (Hulme, 2017: 149), sustaining the delusion of the Great Derangement. Or one may aspire to

the creation through improvisation of new and wholly underdetermined climatic futures. What will be created will be novel climates with new assemblages of local weather. Rather than re-creating a climatic past, the only possibility is to go forward with new sets of conditions in place. The interplay between the material emanations of humanity's cultural evolution and the physical forces of the non-human world will lead to perpetually improvised climates, climates which are neither stable nor predictable. (Hulme, 2017: 150)

To have a sense of what such novel climates might look like requires a more detailed scientific *and phenomenological* understanding of what changes with climate change: What does it mean to live in a novel climate?

2.2 From weather to climate and back again

Clarifying the nature of climate is of central concern not only to theoretically minded geographers, but also to scientists who seek to explain and address climate and its changes. As the authors of a World Meteorological Organization (WMO) report on climate in the 21st century note:

Climate is so central to every aspect of our lives that we give little thought to what precisely it is. To appreciate fully all the reasons why the climate affects so many features of our existence, we need to define what we mean by climate. (Burroughs, 2003: 14)

The report goes on to define climate in contrast to weather, citing Mark Twain: “Climate lasts all the time, weather only for a few days” (Burroughs, 2003: 14).³ As time goes by, tangible weather fades into intangible climate as “a measure of what to expect in any month, season or year [...] arrived at using statistics built up from observations over many years.” (Burroughs, 2003: 14) This statistical account offers a mathematical approximation of climate, just as a climate model offers an approximation of its “target system” (Knutti, 2018).⁴

Differentiating between weather as the perceptible and climate as the approximated and imperceptible face of the atmospheric processes that engulf us—taking place on different scales of space and time—is a common trope in attempts to define climate (see also Simonetti, 2019; Knox, 2020). Brace and Geoghegan (2011: 291) succinctly define climate, following the definition of the Intergovernmental Panel on Climate Change (IPCC)—often termed the most authoritative body on global climate science—as a “statistical construct”: “Climate is difficult to grasp because it is not the weather and not the seasons, but an accumulation of data over a timeframe that is perhaps a generation in length.”

This brief introduction into the scientific concept of climate highlights the difficulties inherent in understanding *what* changes with climate change: How can climate and its changes be experienced if climate is, on the basis of scientific accounts, almost proverbially

³ Although this quote is often attributed to Mark Twain, it is in fact from a collection of student answers to examination questions, published as *English as She is Taught* in 1887 with a commentary by Twain (Le Row, 1887).

⁴ Osaka and Bellamy (2020) identify a form of circular reasoning in attempts to attribute weather to climate and its changes: “If global climate is an aggregate of weather, then how can climate change be responsible for any given extreme weather event?” (Osaka and Bellamy, 2020: 3) Although we come to know climate, from a scientific point of view, through the aggregation of weather, climate is more than such an aggregate. Judging such reasoning to be circular hence confuses specific ways we come to know climate with what climate is (on questions of scale and climate, see also Clark, 1987; Wilbanks and Kates, 1999).

distinguished from weather on the very grounds that it *cannot* be experienced?

To clarify this question, my second path of inquiry turns to examples of how climate change has recently been accounted for in the media before turning to the scientific assessment reports themselves.

2.2.1 The deniers

In contrast to the accounts of the IPCC and one of its parent organisations, the WMO, looking for changes in climate in (unseasonable) weather has long been a sort of cardinal sin in climate change debates. In 2015, as the *Washington Post* then reported, Sen. Jim Inhofe (R-Okla.) attempted to disprove climate change with a snowball (see Figure 1):

Sen. Jim Inhofe (R-Okla.) has, once and for all, disproven climate change. While “eggheads” at “science laboratories” were busy worrying about how the increase in heat-trapping gases in the atmosphere was leading to a long-term upward shift in temperatures and increased atmospheric moisture, Inhofe happened to notice that it was cold outside. *Weirdly* cold outside. So cold, in fact, that water falling from the sky had frozen solid. So he brought some of this frozen water into the Capitol and onto the Senate floor to show everyone, but mostly to show the eggheads. He referred back to the time that his kids made an igloo – and then dropped his bombshell: “It’s very, very cold out. Very unseasonable.” [...] “So,” he said, throwing the snowball to the sitting Senate president, “catch this.” (Bump, 2015)



Figure 1: Jim Inhofe holding a snowball. Still from C-SPAN clip of a Senate

Drawing on the current weather to make a point about climate change made Inhofe into an easy figure of ridicule, having committed such as basic mistake. “Stop looking for climate change outside,” Philip Bump, reporter for the *Washington Post*, appears to say, “and go visit a lab!”

Of course, climate change neither takes place in a lab nor on the Senate floor, but in the spaces between. Yet the climate surrounding us, following the definition above, is intangible and its changes themselves imperceptible, even as the impacts of climate change turn ruinous. There is, then, an unintended deeper truth to a crude and bad-faith comparison put forward by one conservative TV talk show host in the wake of the 2020 California wildfires:

Climate change, they said, caused these fires. They didn’t explain how exactly that happened. How did climate change do that? They didn’t tell us. But they just kept saying it. In the hands of democratic politicians, *climate change is like systemic racism in the sky*, you can’t see it, but rest assured it’s everywhere and it’s deadly. And like systemic racism, it’s your fault. (Carlson, 2020: emphasis MH)

Just because something is not visible as a simple object of perception, such as systemic racism or climate change, does not mean it is not real or that its effects are not acutely felt. Rather, it simply takes analytical work to bring such aspects of reality to the fore, to make experiences of this sort legible to those less or not affected.

2.2.2 The activists

Aside from American climate change deniers, however, there has been a shift in public perception around attributing weird, unseasonable weather or extreme weather events to climate change as possible “*signs of the crisis*” (Chakrabarty, 2009: 199, emphasis MH). Thunberg’s school strike for climate started in August 2018, following a summer heatwave with extensive wildfires in Sweden. In an interview with *The Guardian*, shortly after the first school strike, Green Party member of Sweden’s parliament Janine Alm Ericson explained that

Thanks to the hot summer it has become easier for people to *imagine* what climate change can mean for us and others in Europe if we continue to ignore what is happening. (Crouch, 2018: emphasis MH)

Ericson’s statement reveals a fundamental tension at the heart of experiential accounts of climate change, a *causal asymmetry* that marks the drifting apart of experience and scientific

knowledge: Changes in climate must at some point find their expression in changes in weather, but changes in weather do not necessarily point to changes in climate. Hence any particular unseasonable weather can, at best, serve as an occasion to *imagine* what climate change would mean for us, experiencing “a preview of one possible future” (Obama, 2015), even though one is experiencing right at that moment what it *would* mean for climate to change; the imaginary turning real (on climate change as a theoretical threat, see also Kirkman, 2007: 26).

2.2.3 Weird weather; or, climate change illusions?

There is good reason for the claim that experiences of weird weather, such as Inhof’s “weirdly cold” weather or the unusual Swedish heatwave, should at best give us cause to imagine what climate change may mean for us.

Numerous studies have shown that personal experience is notoriously unreliable when it comes to witnessing climate change (for a critical review of such studies, see Reser and Bradley, 2020). Certainty in global warming based on personal experience may vary with political orientation (Marquart-Pyatt et al., 2014; McCright et al., 2014), individual beliefs (Howe and Leiserowitz, 2013), TV weather forecasts (Bloodhart et al., 2015), and daily outdoor (Li et al., 2011; Zaval et al., 2014) or even indoor temperature (Risen and Critcher, 2011). Other studies, however, have shown that “public perceptions correspond with patterns of observed temperature change from climate records” (Howe et al., 2013: 352).

One presumption underlying studies which question the reliability of ‘experiencing climate change’ is that our experiences of weird weather as signs of climate change are simply illusionary and can hence be easily manipulated.

Any single experience of weird weather cannot be a reliable indicator of climate change. But this is true, in a sense, of all our experiences. As Husserl ([1907] 1997: §84, 247) notes, our sense of something being real accrues through continuities in experience, through our experiences continuously matching our expectation. Illusions are possible only because they occur against this backdrop of a sustained sense of reality and hence arise “in conflict against pre-given Being” (Husserl, [1907] 1997: §84, 249). Illusions, then, generally do not persist because “the course of experience dashes belief in them to pieces and this belief must pass over into unbelief.” (Husserl, [1907] 1997: §84, 249) Reality can overwhelm our (illusionary) experience with “strong counterforces” (Husserl, [1907] 1997: §84, 251) which force us to recalibrate our sense of reality/our exceptions of experience. Sustained experiences of weird weather or “global weirding” (Friedman, 2010) are, I argue, experiences of ‘strong

counterforces' leading us to question the aforementioned Holocene sense of reality. The 'backdrop' that is called into question is the experiential reality of climate's certainty.

This process of recalibration which sets in with sustained unusual or extreme weather also takes place on a conceptual level: experience itself turns weird as incommensurate scales of space and time coalesce in experiences of weather as the face of climate change (on defining the environmentally weird, see also Turnbull, 2021). This, Morton (2013: 55) aptly notes, "is weird weather, this global warming weather." Instead of "climate science [cutting] against the grain of ordinary human experience" (Jasanoff, 2010: 237), experiences of climate change shred the very conceptual fabric that keeps weather and climate apart. The term "global warming weather" or, alternatively, "climate change weather" describes, looking back at the WMO definition, an impossibility. Yet climate, through its changes, increasingly becomes conspicuous to us in experience, even as some might yet lack the words and concepts to describe this moment.

2.2.3.1 *Wildfire weather*

Solnit (2020) gives a striking account of weird weather in her recollection of the 2020 wildfires in California for *The Guardian*; waking up in San Francisco where "the crisis remained confined to the air and the light" (Wiener, 2020):

The sky was the muddy yellow of an old bruise at 7am in San Francisco on Wednesday, and by eight it was a dull orange and the darkness that felt like night was coming on. This morning was perhaps the most unnatural-feeling and unnerving of my life, with darkness rather than daytime rolling in. People around California reported that the birds that would normally be singing were silent. On some of the days, since the freak lightning storm in the heat wave of mid-August launched this explosive fire season, the sun has been red, and when the moon was full it was also red near the horizon, but this morning there was no sun to be seen through the murk. Ash was falling, the ash of trees, forests, homes, towns, dreams burning up. In the strange light, the world around us looked ghostly, otherworldly, unnatural, unnerving, disturbing. (Solnit, 2020)

Solnit's account shows forcefully how different rhythms are out of joint in this new world the wildfires have created, eliciting "an ongoing sensation of jet lag" (Wiener, 2020); weird weather indeed (on wildfire weather and time, see also LeMenager, 2018). Yet, Solnit observes, what is disturbing is not only this particular wildfire event, but the future it outlines.

The toll takes many forms from loss of life to loss of homes and communities to displacement and disruption to, even for those who are not technically impacted, the dread and dismay of *living in this whole new hell*. (Solnit, 2020: emphasis MH)

This “whole new hell” Solnit anticipates is our (imagined and lived) future in a changed climate (on adapting to ‘new normals’, see also Moore et al., 2019). Unlike bad weather, the ‘bad climate’ to which one must calibrate oneself will not rectify itself. In this moment of recognition, an experience of climate appears to manifest itself, as “we inhabit the diachronic, the discordant, the inchoate” (Malm, 2018: 15). Malm (2018: 15) further notes that even in these “very early stages” of climate change, “our psychic experience, our cultural responses, even our politics show signs of being sucked back by planetary forces into the hole of time, the present dissolving into past and future alike”, as past and future emissions frame our present (on the different temporalities of climate change and their relation to colonial violence, see also Whyte, 2017). Weird weather, then, is an extreme case of what Simonetti (2019) has called the *compression* and *acceleration* of time, through which climate (change) surfaces.

Taking a more detached approach, climate scientist Gleick (2020) gives his own account of the relationship between the 2020 California wildfires and climate change in an opinion piece for *The Guardian* published the day after Solnit’s, aptly titled: “The future has arrived” (on climate scientists’ experience of climate change, see also Renouf, 2021). Once more, time is out of joint. Gleick argues that

Projections have turned to reality. The future has arrived. What we’re seeing now, with massive wildfires, worsening storms, unprecedented heat, and record droughts and floods is just the beginning of the climate changes to come. (Gleick, 2020)

Yet, as Gleick goes on to write, the predicted climate has not quite turned into a present reality we can experience. “I’m not arguing”, Gleick writes, “any individual disaster has been *caused* by climate change, though the science is strengthening on that as well. I’m saying we are now seeing the unambiguous *influence* of climate change on these disasters.” (Gleick, 2020) But how does climate change ‘do that’? How does climate (change) influence the weather we experience, and do we somehow experience this influence itself?

2.2.3.2 *Attributing weather events*

Weather event attribution studies seek to illuminate precisely this relationship between changes in climate and extreme weather events by probabilistically mediating between weather and

climate.

Event attribution assessments seek to quantify to what extent anthropogenic or natural influences have altered the *probability* or *magnitude* of a particular type of event having occurred. (Stott et al., 2016: 25, emphasis MH)

Comparing the likelihood of a particular event “in the ‘actual’ world and the counterfactual ‘natural’ world without human influence on climate” (Stott et al., 2016) with the help of climate models allows weather attribution studies to determine how much more (or less, or equally) likely an extreme weather event has become due to anthropogenic influences. The *World Weather Attribution initiative* conducted attribution studies for the aforementioned heatwave of 2018 and the heatwave of 2019 in Europe, concluding that anthropogenic influences have made such heatwaves considerably more likely.⁵ Otto (2020), co-author of said attribution studies, notes in an interview with *The Guardian* after the heatwave in 2019 that this “is a strong reminder again that climate change is happening *here and now*. It is not a problem for our kids only.” (Carrington, 2019: emphasis MH)

Although climate change is happening here and now, this ‘here and now’ remains, in the language introduced earlier, *weird* in another way. Even when a weather event is *attributed* to climate change (as opposed to somehow *experienced* as climate change), this attribution is only probabilistic. The “climate dice” are loaded (Hansen et al., 2012; Karl and Katz, 2012). Any single weather event cannot be, in the attributionist framework, an experience of climate change. Rather, from this perspective, our experience of climate change is mediated through probabilities.⁶

From a purely physical point of view, the attribution of an individual extreme event solely to anthropogenic climate change is essentially impossible, as the synoptic, chaotic components will always dominate the genesis and evolution of an event. (Lehner and Stocker, 2015: 731)

As anthropologist Rudiak-Gould (2013: 121) points out, there are “ideological depths” hidden beneath the surface level question of climate change’s (in-)visibility. Rudiak-Gould characterises the invisibilism which is dominant amongst climate scientists thusly:

⁵ <https://www.worldweatherattribution.org>

⁶ Winsberg (2018: 87) has argued that the probabilities of climate science more broadly are akin to subjective credences as opposed to objective probabilities.

There is little room for visibilism in this conception of climate change: the gulf between brute, visible reality and climate change is crowded with arcane mathematics, high-tech measuring devices, and inhumanly large temporal and spatial scales. (Rudiak-Gould, 2013: 121)

Probabilistic attribution, as outlined above, allows climate scientists to bridge this gulf by at once asserting climate change's invisibility and the possible or probable impact of this 'invisible force' on our visible reality: although everyone may be able to experience climate change 'here and now', climate science with its "arcane mathematics" and "high-tech measuring devices" remains the arbiter of climate change's ultimate status.

In effect, climate researchers claim to peer into the invisible depths of the world, to spy the hidden order of real objects that explains the shifting and apparently disconnected fragments of our lived experience. (Kirkman, 2007: 27)

The different accounts given above, oscillating between weather and climate, sought to highlight the difficulties that arise when one considers the experiential reality of climate change. The "distinction between climate and weather does not hold pure." (Simonetti, 2019: 243). One *New York Times* article, summarising different expert views on the relationship between the 2020 California wildfires and climate change, captures this difficulty well: "Evidence of global warming—which, scientists said, helps drive a rise in wildfire activity by creating hotter and drier conditions—was *hanging visibly in the air*." (Branch and Plumer, 2020) This visible evidence of climate change is as compelling as it is, from an invisibilist scientific viewpoint, impossible.

2.3 Finding climate in intergovernmental reports

The third path of inquiry I follow turns away from the public reception of climate science and toward the assessment reports international climate scientists themselves produce.

2.3.1 IPCC Working Group I: Defining climate

How does climate science define climate? Reflecting on the state of conceptual clarity in climate science, philosopher of science Werndl points out that

how to define climate and climate change is *non-trivial* and *contentious* [...]. In both public and scientific discourse, the notions of climate and climate change are often loosely employed, and it remains unclear what exactly is understood by them. (Werndl, 2016: 338, emphasis MH; see also Bradley et al., 2020)

Werndl (2016: 358) goes on to suggest that this ambiguity, evident in reputable reports on the ‘state of climate science’ such as the IPCC’s *Assessment Reports* (ARs), “may well be intended to subsume under one characterization the various different definitions of climate.” Viewed under this light, the ambiguity surrounding climate, climate’s “near infinite plasticity” (Hulme, 2009: 28), is not a flaw to be corrected, but an auspicious feature.

Further suggestive, albeit anecdotal evidence for the purposiveness of climate’s definitional ambiguity can be found in the anonymous referee comments publicly available on a paper submitted to *Geoscience Communication* titled “What even is ‘Climate’?”:

[B]eyond the well-known and frequent confusion of ‘climate’ and ‘weather’ in the media and among lay audiences [...], it is not clear there is really a need for an agreed definition of ‘climate’. The term is used loosely in public utterances [...], but the case has not clearly been made in the paper that this variability in terminology has seriously hindered either science or public understanding. (Referee, 2018)

Following an idea raised by the original author of this paper, which was ultimately rejected by *Geoscience Communication*, climate may best be described as a “classification of convenience” (Bothe, 2018: 8; Bothe, 2019).

Having introduced the definitional ambiguity of climate in abstract, I turn to the glossary of the IPCC ARs in order to highlight how ambiguity and plasticity come into play in defining climate. Turning to the glossary of the Fifth Assessment Report (AR5) of IPCC *Working Group I* (WGI) on the physical science of climate change, one comes across the following definition:

Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system. (IPCC, 2013: 1450)

In the narrow sense, both what is meant by ‘relevant quantities’ and the time period over which they are statistically described are open for debate; climate is both materially and temporally ambiguous (see also Lovejoy and Schertzer, 2012: 4).⁷ If one considers the wider definition of climate as a climate system, delimiting climate becomes immeasurably more difficult. Climate understood as “an interactive system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere, forced or influenced by various external forcing mechanisms, the most important of which is the Sun” (IPCC, 2001: 87), seems to be “everywhere (Can you escape from climate? Is anywhere on Earth climate-less?) and yet it is nowhere (Can you point to climate or take me to see it?).” (Hulme, 2017: 1)

To make sense of this paradoxical ubiquity and yet absence of climate it is helpful to turn to the figures used in IPCC ARs. In her monograph-length study of the genealogy of climate images, Schneider (2018: 10) has applied Fleck’s ([1935] 1979) signature concept in order to argue that “styles of thought” can be deduced from (climate) images and figures. With regards to the figures the IPCC employs, Schneider (2018: 221) identifies an increasing (photo-)realism. From a media theoretical perspective, the more a scientific figure appears ‘natural’, the greater the effort that went into constructing it (Schneider, 2018: 223). Schneider (2018: 231) argues that the increased realism of climate figures is meant to function as an implicit measure of the accuracy of the climate models themselves; the more realistic the figure, the more exact the model.

The simulated worlds are presented as reality. For the simulation of possible future climates, this means that there appears to be no other possibility now than to at once take the simulated, scientifically generated worlds of climate scientists as possible and probable realities whilst simultaneously critically evaluating them. (Schneider, 2018:

⁷ In a previous assessment report, AR4, the definition is almost identical, apart from the last sentence, which has now been omitted: “In various chapters in this report different averaging periods, such as a period of 20 years, are also used.” (IPCC, 2007: 942).

Taking these worlds seriously, I start from the ‘point of view’ of the most important external forcing mechanism, the Sun. Here, climate is conceived of as a global phenomenon, where solar radiation leads to an uneven distribution of temperature, which in turn leads to the emergence of “a broad band of westerlies in the extra-tropics of each hemisphere in which there is an embedded jet stream” (IPCC, 1996: 57) (see Figure 2).

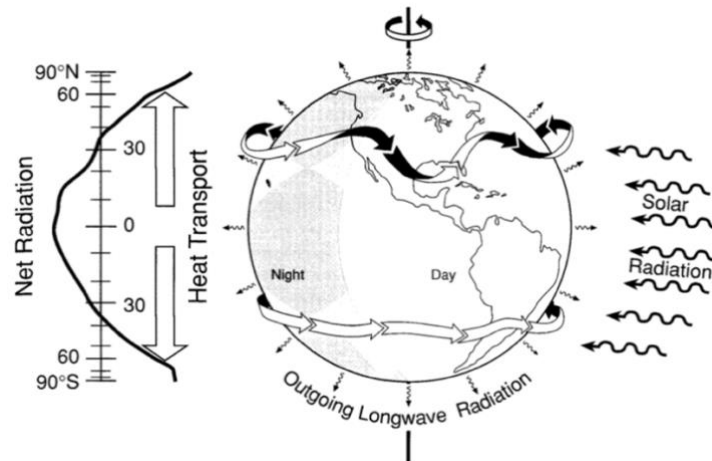


Figure 2: Uneven distribution of incoming solar radiation (IPCC, 1996: 57).

Entering the Earth’s atmosphere, the very first IPCC AR offers us a view of this process ‘from the inside’, which could represent anywhere on Earth (see Figure 3).

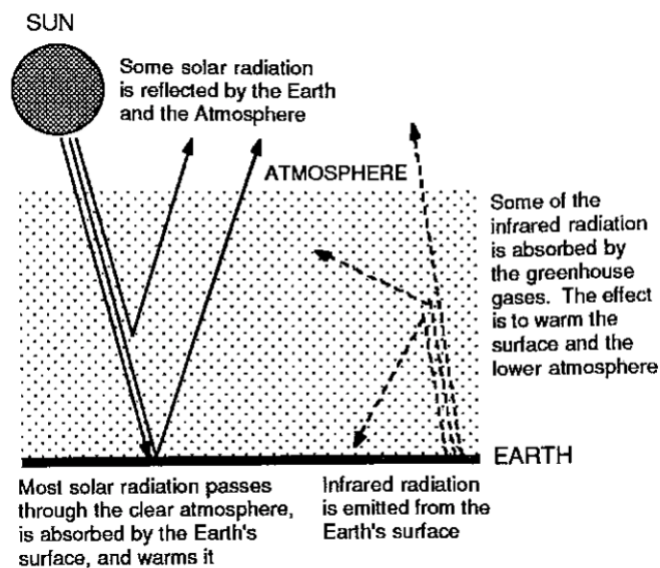


Figure 3: Absorption of radiation in the atmosphere (IPCC, 1990: xxxvi).

Viewing climate from an impossible perspective, where sea level appears to be almost at eye level, a further type of figure articulates this abstract conceptualisation in more detail, pointing to the different elements which make up the climate system (see Figure 4).

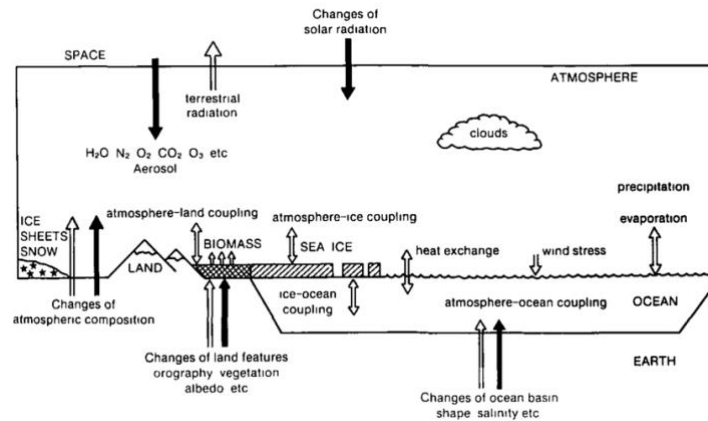


Figure 4: Schematic illustration of the climate system components and interactions (IPCC, 1990: xxxv).

‘Correcting’ this impossible perspective through an increased realism, the final figure I want to highlight is the IPCC AR3 WGI’s depiction of the climate system (see Figure 5), where the different elements of the climate system are brought together into a single landscape perspective, as though one were looking out from a mountain top.

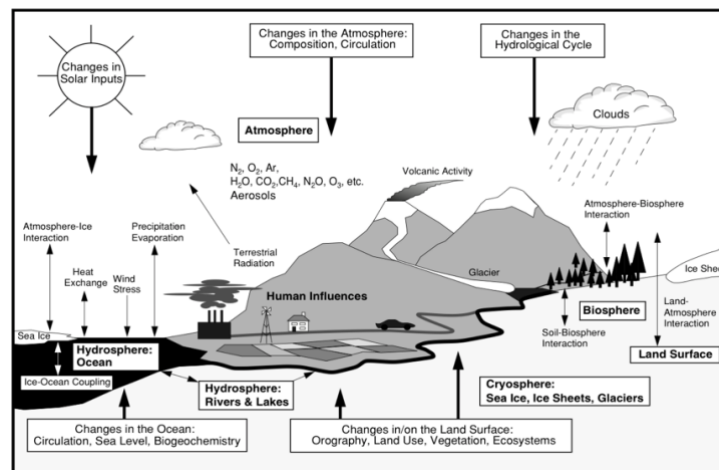


Figure 5: Schematic view of the components of the global climate system (**bold**), their processes and interactions (thin arrows) and some aspects that may change (**bold arrows**) (IPCC, 2001: 88).

Considering the last two figures closely, they are both attempts at bringing climate into view. On the one hand, they are persuasive in that they resemble the environment we experience,

offering us the illusion that we could simply point out the different elements that make up the climate system. On the other hand, these figures also have an alienating quality to them, labelling objects and processes that are invisible to us and drawing together different spatial and temporal scales into an impossible proximity. The cause of this alienating effect lies in the fact that these last two figures of course do not depict any ‘actual’ climate system, but are rather meant to exemplify the global climate system by stage-setting a local one (see also Schneider, 2018: 230). The last figure in particular has an almost cartoon-like quality, depicting a pastoral life—a farm, a windmill, a lonely house—next to a factory, which all sit between sea ice and a volcano.

The alienating quality of the last stage-set climate scene points back to the drifting apart of experience and scientific knowledge.

We might say that climatologists are able to conjure climates into statistical existence through averaging meteorological measurements made repeatedly at the same place day after day. *Climates therefore exist abstractly as numbers.* We might also recognise that Earth system scientists are able to simulate climates into virtual existence inside their computers, reproducing *in silico* the workings of a physically connected global Earth system and generating terabytes of ‘climate data’. Climates therefore also exist virtually as numerical models. (Hulme, 2017: 1, emphasis MH)

Yet climate is not only made real through statistical or computational conjuring but is experienced.

This experiential reality not only turns conspicuous in the weirdness of extreme weather events detailed above, but is equally hinted at in the ordinary pastoral setting depicted in Figure 5, through which the basic fabric of human social life becomes tangible, not only as the ‘Human Influences’ on the global climate system, but as itself *being influenced by the climate*. IPCC AR3 WGI was the first and last report to highlight this aspect of climate explicitly.

Weather and climate have a profound influence on life on Earth. They are *part of the daily experience of human beings* and are essential for health, food production and well-being. Many consider the prospect of human-induced climate change as a matter of concern. (IPCC, 2001: 87, emphasis MH)

When comparing the IPCC’s glossary definition of climate with the passage above, two incommensurable understandings of climate come to the fore. Climate, as a statistical average or numerical model, cannot be experienced *in principle*: “[C]limate (and by extension, climate

change) is a phenomenon that can only be perceived and grasped through the ‘sensory organs’ of science – measurements, models, and calculations” (Osaka and Bellamy, 2020: 3; see also Simonetti, 2019: 242-243; O’Reilly, 2016).

A phenomenological account of climate and its changes then faces a three-fold task: (i) How does climate turn conspicuous through the heightened frequency and intensity of extreme weather events? (ii) How does climate form the inconspicuous backdrop for our experience and existence? (iii) How does climate science relate to conspicuous or inconspicuous experiences of climate and its changes?

2.3.2 IPCC Working Group II: (Experiencing) the impacts of climate (change)

Of the three IPCC Working Groups—WGI investigating the physical science basis, WGII investigating impacts, adaptation, and vulnerability, and WGIII investigating the mitigation of climate change—, Working Group II most directly deals with the impact of climate and its changes on human experience. The authors of the WGII *Summary for Policymakers* (SPM) note that in “recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans.” (IPCC, 2014: 4) Once more, highlighting how *changes* in climate impact or affect ‘natural and human systems’ turns climate conspicuous.

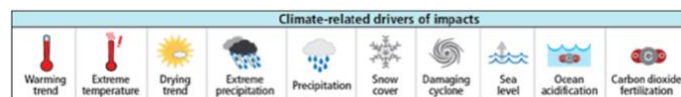


Figure 6: Climate-related drivers of impacts (IPCC, 2014: 21).

According to the authors, changes in climate are not somehow experienced directly, but rather through *impacts* caused by climate-related drivers (see also Figure 6):

Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. Impacts are also referred to as *consequences* and *outcomes*. The impacts of climate change on geophysical systems, including floods, droughts, and sea level rise, are a subset of impacts called physical impacts. (IPCC, 2014: 5)

That changes in climate are mirrored in changes in our lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure points to the fact that climate, as it

comes to matter to us, is highly contextual. What aspects of climate matter to us, the ways in which climate turns conspicuous depends on which aspects we are exposed and vulnerable to (IPCC, 2014: 3). Consequently, the impact and (experiential) reality of climate change is not evenly distributed.

Differences in vulnerability and exposure arise from non-climatic factors and from multidimensional inequalities often produced by uneven development processes (*very high confidence*). These differences shape differential risks from climate change. [...] People who are socially, economically, culturally, politically, institutionally, or otherwise marginalized are especially vulnerable to climate change and also to some adaptation and mitigation responses (*medium evidence, high agreement*). This heightened vulnerability is rarely due to a single cause. Rather, it is the product of intersecting social processes that result in inequalities in socioeconomic status and income, as well as in exposure. Such social processes include, for example, discrimination on the basis of gender, class, ethnicity, age, and (dis)ability. (IPCC, 2014: 6)

This intersectionality of natural and cultural/social causes of exposure to climate change points to the deeper intertwinement of our everyday lives with climate. As the paragraph above highlights, assessments of vulnerability and risk in the context of climate change cannot be disentangled from *who* is at risk *why* and *where*. Conversely, aspects of our social, economic, cultural, political, and institutional lives cannot be disentangled from the climate in which they are situated, not least because these aspects in turn materially influence the climate system itself (see Figure 7) (Jónsdóttir, 2013).

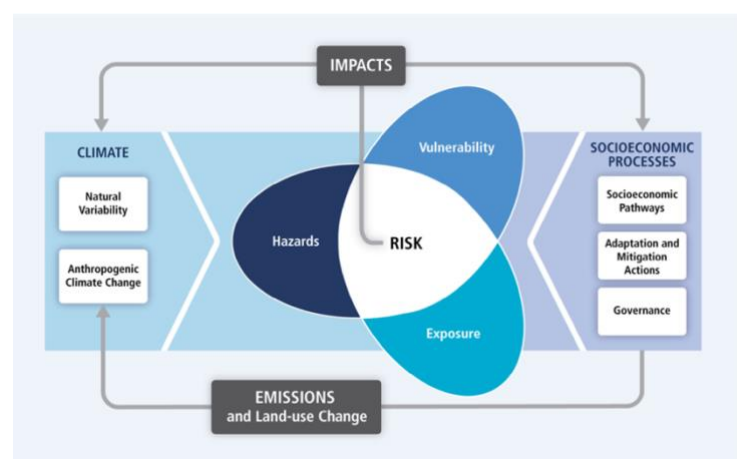


Figure 7: “Illustration of the core concepts of the WGII AR5. Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and

natural systems. Changes in both the climate system (left) and socioeconomic processes including adaptation and mitigation (right) are drivers of hazards, exposure, and vulnerability.” (IPCC, 2014: 3)

This entanglement with climate may in turn lead one to question how neatly the different aspects that play a role in constituting risk, according to the IPCC WGII authors, can really be separated. Ribot (2018: 219) explains that “climate-oriented explanations of weather-related damages are known to occlude the multiple causes of the vulnerabilities that place people at risk” (see also Ribot, 2014). Nightingale et al. (2019: 344) have argued that while

the vocabulary of impacts, adaptations, emissions and mitigation has become firmly embedded in the policy sphere, we believe this framework conceals ways of knowing that might help more effectively address the climate predicament and foster determined action.

The framework Nightingale et al. criticise is one which holds on to the *dualism* that one can

separate out the ‘climatic’ drivers of change from ‘social’ ones, therein creating a set of policies to deal with climate change adaptation and mitigation—in isolation from the broader trajectories of socio-environmental change. This is not only scientifically impractical, because there are no sound conceptual grounds for this separation, it is also politically charged. Parsing out supposedly climatic drivers of change might help make climate change a more governable phenomena in the short-term, but it leads to an impoverished understanding of the ways that environmental change is embedded within social change. (Nightingale et al., 2019: 344; see also Leach et al., 2010; Leichenko and O’Brien, 2008; Leichenko and O’Brien, 2019; Nightingale, 2018)

The intertwinement of environmental and social change lead Nightingale et al. (2019: 344) to conclude the “co-emergence of societies and global climate change.” (See also Jasanoff, 2010) Separating “society and environment as two separate, interacting domains” has

been extensively critiqued on the basis that it is not only *ontologically inaccurate*, because society is not a discrete domain from nature, but also that retaining the divide for analytical purposes obscures how societies and environments are co-emergent (Haraway, 1991; Jasanoff, 2004; Barad, 2007). In other words, humans do not stand outside their environments but are active protagonists in their production, including of course *the production of climate and our knowledge of it*. (Nightingale et al., 2019: 344, emphasis MH)

Climate, then, is not a single entity to be defined, found or even experienced, but something to be interpreted as a complex object of co-production. Instead of adhering to “convenient frameworks that can more easily accommodate current thinking” (Nightingale et al., 2019: 346), such as presuming a dichotomy between experience and the invisibilist truths of climate science, Nightingale et al. (2019: 345) suggest we should “radically rethink the scientific method”.

2.4 Climate: nature or culture? The Anthropocene question

Arguing against a strong distinction between society/culture and nature, as Nightingale et al. (2019) do, means arguing against a strong distinction between experience and scientific knowledge too. To reckon with the “messy realities” (Nightingale et al., 2019: 345) climate change confronts ‘us’ with means to take seriously how climate change is experienced and conceived of in an ‘ontologically plural’ way. There is, however, a danger in overcoming the drifting apart of experience and scientific knowledge in this way: it runs the risk of conflating the social/cultural with the natural, the subjective with the objective. As a result, ‘plural ontologies’ of climate drift apart, making a shared reality of climate and its changes impossible. My fourth and final path of inquiry will then reflect on what remains of climate in experience when the distinction between society/culture and nature is dissolved.

2.4.1 The Anthropocene: nature as culture

Detailing the relation between nature and culture through the lens of climate, Hulme explains that the very story of climate change

is a story about the meeting of Nature and Culture, about how humans are central actors in both of these realms, and about how we are continually creating and re-creating both Nature and Culture. (Hulme, 2009: xxviii)

In Hulme’s own account, what climate *is* emerges as climate stabilises “cultural relationships between people and their weather.” (Hulme, 2017: 5) Climate itself is “an idea of the human mind” (Hulme, 2017: 2).

The fact of anthropogenic climate change, the material influence of ‘culture’ on ‘nature’, leads Hulme to the radical conclusion that if humans change the composition of the atmosphere with unpredictable consequences, then “the possibility of such stability [and hence climate itself, MH] is a chimera” (Hulme, 2017: 152). Consequently,

Climate can no longer be helpful as an idea that sits between weather and culture because weather and culture are fusing into a single reality with no independent mediator; we are the weather and the weather is us [...]. (Hulme, 2017: 152)

Climate, defined as a stabilising mediator between nature and culture, vanishes in the confluence of nature and culture, much like the difference between weather and climate appeared to vanish with the onset of ‘weird weather’.

Although Nightingale et al. (2019) do not go so far as to argue that climate can no longer be helpful as an idea, their account does beg the question what is left of climate when what climate materially *is* and how it is *known* are both products of culture and society. Where would one begin to conceptually carve out ‘the climatic’ as opposed to ‘the political’ or ‘the social’ if both are inseparably intertwined? However one answers this question has consequences for what it would mean to experience climate and its changes, and if any sort of universally shared experience of climate (change) is possible.

This discussion touches on a central theme of the *Anthropocene* concept (see also Hulme, 2017: 151-152), i.e. the idea that humankind’s influence on the global environment is so immense that our activities have grown into a “significant geological, morphological force” (Crutzen and Stoermer, 2000: 17; Chakrabarty, 2009; Oreskes, 2014); humankind ascends to a force of nature, concurrently eliminating the very category of nature (as that which is opposed to culture/society). Part of the Anthropocene’s persuasiveness is that it captures the bleeding together of nature and culture outlined above. In the Anthropocene, the argument goes, neither can be clearly distinguished from the other (Castree, 2014: 455).

Contrary to these understandings of the Anthropocene and to theories proclaiming “the end of nature” (McKibben, 1990; Smith, 2008; Castree, 2013; Vogel, 2015; Purdy, 2015), I aim to show the continued relevance of the concepts of climate (and nature) *as distinct from society, culture, and subjective experience* by turning towards two different critiques of the Anthropocene.

2.4.2 Staging the Anthropocene

Swyngedouw and Ernstson (2018: 4) analyse the Anthropocene as a process of *staging*, highlighting certain possibilities whilst obscuring or off-staging others. As the title of their article suggests, they call the realm of off-staged possibilities the *Anthropo-obScene*.

Relational ontologies, such as more-than-human ontologies or object-oriented ontology, are one of the possibilities of understanding our relationship with nature drawn onto stage through the concept of the Anthropocene, according to Swyngedouw and Ernstson (2018: 5). (In Sections 5.1.1.1 and 5.3.2, I point to how relational ontologies emerged through a sustained critique of phenomenology.)

Swyngedouw and Ernstson (2018: 6) critique relational ontological approaches as they produce a (false) relational symmetry between humans and non-humans, which in turn pave the way for a “phantasmagorical scripting of a fully socialized nature” (Swyngedouw and

Ernstson, 2018: 15). Put simply, they give us license to theorise relationality amongst the more-than-human analogously to the relationality in which we, as humans, are involved. A fully socialised nature in turn allows for the deepening of hyper-accelerationist eco-modernist visions (Swyngedouw and Ernstson, 2018: 5); propagating responses to climate change such as geo-engineering. Other possibilities of imagining our relationship with nature are obscured by relational ontologies as they inscribe ‘social facts’ into nature as fully socialised (Swyngedouw and Ernstson, 2018: 16). As I discuss in Section 5.3.2, Morton’s (2013) work is a particularly interesting example of this, as he inscribes the scientific concept of climate into the reality he argues exceeds human experience and comprehension.

Furthermore, the hyper-accelerationist eco-modernist visions called into question by Swyngedouw and Ernstson (2018) obscure a deeper process that is at play in staging the Anthropocene. Swyngedouw and Ernstson (2018) identify a vicious circle at the heart of approaches to climate change as outlined above. On the one hand, framing climate change as a problem that can be fixed through technical interventions promises “a fantasy of a total protection and securitization of life” (Swyngedouw and Ernstson, 2018: 16) in the face of global environmental change. Yet, on the other hand, the relief offered by “empty signifiers like ‘sustainability’, ‘adaptation’, or ‘retro-eco-engineering’ secures at best a palliative for *temporary relief*.” (Swyngedouw and Ernstson, 2018: 17, emphasis MH)

The time bought through such temporary relief, however, does not simply delay the problem, but worsen it (on the danger of temporary relief through geo-engineering, see also Asayama and Hulme, 2019). This circle of environmental destruction is perpetually reinforced as “socio-ecological destruction” intrudes into human life; “despite the recurrent promises of a ‘sustainable’ future” (Swyngedouw and Ernstson, 2018: 17), nature exceeds the relationality which promised to bound it. The unintended poison (anthropogenic environmental change as the consequence of greenhouse gas emissions) becomes the intended cure (anthropogenic environmental change as the consequence of geo-engineering), the intended cure (anthropogenic environmental change as the consequence of geo-engineering) becomes the unintended poison (anthropogenic environmental change which exceeds relational ontology) (on the identity of poison and cure, see also the concept of *pharmakon* in Derrida, 1981; Swyngedouw and Ernstson, 2018: 17).

Here, Swyngedouw and Ernstson (2018: 22) identify an *immunitary logic* at the heart of the concept of the Anthropocene: The fact that ‘exceptional’ intrusions from outside provoke ever graver responses from society does not weaken, but the logic of temporary relief rather propels and intensifies. Paradoxically, as hyper-accelerationist eco-modernist visions fail to

fulfil their promise, they gain in strength. What could call into question the relational ontologies at the heart of the concept of the Anthropocene—the radical exteriority of nature beyond any relationality—paradoxically strengthens relational ontologies as the ‘immune response’ grows proportionally to the threat; relational ontologies ‘doubling down’ on the promise of relationality.

In order to break free from this self-reinforcing process, Swyngedouw and Ernstson (2018: 20) suggest we must recognise and emphasise the heterogeneity and exteriority at play in our relationship with nature.

To put it simply, natures as well as humans will continue to act in *strange, unaccounted for, excessive manners* that preclude the sort of Anthropocenic adaptive control and resilient management some eco-modernizers foreground. It is precisely this *excess to the relation*, the acting over-and-beyond what a relation sustains, that will keep haunting and propel the earth-system in all manner of different, and largely unpredictable, future trajectories. (Swyngedouw and Ernstson, 2018: 20, emphasis MH)

In short, Swyngedouw and Ernstson (2018) highlight the dangers implicit in the dissolution of the nature-culture dichotomy. Instead, an account of climate and its changes must somehow reckon with elements that escape the total ‘socialisation’ of nature or else risk to fall into the spiral outlined above.

2.4.3 Toward a climate realism

In his book on nature and society in a warming world, Malm (2018: 29) develops a “realist definition” of nature (and climate) that seeks to take into account nature and culture as separable realms (following Swyngedouw and Ernstson, 2018), whilst also recognising their intertwinement (following Hulme, 2017; Nightingale et al., 2019).

Malm’s starting point is Soper’s (1995: 132-133) approach to nature, which starts with environmental degradation as the site where nature becomes evident:

To speak of ‘nature’ in this conception is to speak of *those material structures and processes that are independent of human activity* (in the sense that they are not a humanly created product), and whose forces and causal powers are the necessary condition of every human practice, and determine the possible forms it can take. Such a concept of nature as the permanent ground of environmental action is clearly indispensable to the coherence of ecological discourse about the ‘changing face of nature’ and the need to

revise the forms of its exploitation.

Here, nature could well be replaced with climate in this realist sense. Following an argument put forward by Hailwood (2015: 39), Malm argues that any understanding of anthropogenic changes to the environment or climate requires some understanding of the environment or climate apart from human influence.⁸ “The climate is not created but *changed*, unhinged, disrupted, destabilized.” (Malm, 2018: 63) Extreme weather attribution studies for example require, as discussed above, “models of what the weather would have been like *in the absence of human influence*” (Malm, 2018: 31, emphasis MH; see also Osaka and Bellamy, 2020: 5) in order to estimate the influence of climate change on weather events. The “historical imprint [of human influence on climate] is detected” (Malm, 2018: 31) by recognising that nature and culture are, in some respects, distinct.

Malm goes on to contrast his realist definition with a “purist definition” (Malm, 2018: 33) of nature and climate that is commonly advanced by those who proclaim ‘the end of nature’ (on the myth of pristine nature, see also Denevan, 1992; Denevan, 2011). In particular, Malm takes issue with McKibben’s (1990: 60-61) account in the *End of Nature*:

We have changed the atmosphere, and thus we are changing the weather. By changing the weather, we make every spot on earth man-made and artificial. We have deprived nature of its independence, and that is fatal to its meaning. Nature’s independence *is* its meaning: without it there is nothing but us.

That such a purist definition of nature or climate is difficult to uphold is made clear when Malm tries to apply this approach, for the sake of argument, to the ocean: Oceans are now “marred by plastic waste swirling around in giant gyres, acidification, overfishing and other human impacts that extend into the deepest, darkest recesses” (Malm, 2018: 33). Still, Malm argues,

⁸ Malm (2018: 45) makes a similar argument concerning *hybridist* accounts which claim that “it is impossible to now distinguish where humanity ends and nature begins” (Wapner, 2010: 134; see also Latour, 1993; Purdy, 2015), which I discuss below. Along a similar line of argument, Malm (2018: 79) is critical of *new materialist* accounts that distribute agency equally across the non-human and human realm, which leads to arguments such as: to “conclude that humans alone were responsible for the course of events that resulted from burning coal and domesticating wheat is equally nonsensical, and can only be sustained by placing humans and their cultures firmly outside of the material realm.” (LeCain, 2015: 20; see also Barad, 2007; Schmidt, 2013) Distributing agency and hence responsibility for climate change to coal and wheat, Malm argues, obscures the unique *anthropogenic* nature of the crisis we are facing. Extending this critique to *posthumanism* more broadly, Malm points out that “[t]here is nothing posthuman about the warming condition” (Malm, 2018: 96), even as post-humanist theories gain ascendancy. Malm instead argues that the “warming condition is hyper-human” (Malm, 2018: 97), as humans face the consequences of their (historical) actions on geologic scales.

oceans may be

in a different state, but they are with us as much as ever – and if this applies to the oceans, which form a fairly significant component of what we know as ‘nature’, why not also to that majestic totality? (Malm, 2018: 33)

Similarly,

Human societies have transformed planetary carbon cycles, but not the carbon atoms themselves. If the categories of Nature and Society are obsolete, as it is currently fashionable to propose, this only applies to images of Nature and Society as bounded, distinct realms of reality [...]. (Malm, 2018: 59)

In line with these comparisons, Malm goes on to give his own account of nature as it persists after human influence.

[Nature] refers to the part of the inhabited world that *humans encounter but have not constructed, created, built or conjured up in their imagination*, and that part is very prevalent indeed. It preceded us, surrounds us and will succeed us; it was, is and will be spontaneously generated without us; *it may be under all sorts of influence, but that does not put an end to it*, any more than a continent ceases to be because it has skyscrapers standing on it. (Malm, 2018: 40)

To Malm then, the insight that nature and culture have become entangled in innumerable ways does not present a particular problem nor is it surprising, given that “the *entwinement* of social and natural relations is made not only possible but inevitable, given that the two are continuous parts of the material world” (Malm, 2018: 53, emphasis MH).

In short, there is not, and could never be, a clear date at which humans became “geophysical.” To be biological is also to be geophysical. Thus, the degree to which humans have influenced climate must necessarily be considered as a dynamic long-term process, a process that [...] is also deeply enmeshed in a political ecology—that is to say, how social affiliations, differences, and inequalities are also produced and reconstituted. (Bauer and Ellis, 2018: 214; on the ‘socioscene’, see also Ribot, 2014: 696).

This continuity, however, does not mean that the social and natural collapse into each other. Rather, ecological crises in particular “render the distinction between the social and the natural more essential than ever” (Malm, 2018: 54), because this distinction is important for

recognising the cause of and responsibility for environmental degradation: “It is human agency that establishes blame, liability, and responsibility. [...] The force-agency distinction matters if response is to follow.” (Ribot, 2018: 219)

Here, Malm positions himself strongly against Latour’s approach, as he sees it. Where Latour (2015: 221) claims that “there is not one single case where it is useful to make the distinction between what is ‘natural’ and what ‘is not natural’”, Malm argues that

In reality, it is precisely the other way around. Maximising the prospects for survival presupposes that we become more alert than ever to the dichotomy between what people create through and through and what is not their doing. (Malm, 2018: 65)

Malm further clarifies his critique of Latour by pointing out an (unintended?) consequence of collapsing the nature-culture dichotomy. As previously highlighted with respect to Nightingale et al. (2019), how can one account for an ecological crisis when nature and culture become indistinguishable from one another? The Latourian solution, according to Malm, is to turn the ecological crisis into a “*crisis of scientific objectivity*” (Malm, 2018: 103):

As has often been noted, *every ecological crisis opens up a controversy among experts*, and these controversies generally preclude the establishment of a common front of indubitable matters of fact that politicians could subsequently use in support of their decisions. (Latour, 2004: 63, emphasis MH)

Instead of raising the question of scientific expertise, Malm argues for a *climate realism*: accepting the fact of climate change as something climate science simply registers and does not produce or construct (Malm, 2018: 105). Although Malm puts forth a convincing argument for the need to distinguish between nature/climate and culture, he remains silent on the phenomenology of his realism, i.e. what distinguishes experiences of weather from experiences of climate (change).

2.5 The promise of phenomenology

In the introduction to this chapter, I announced that I would be outlining the problem a phenomenological approach to climate and its changes responds to. By way of concluding, let me reflect on the promise of phenomenology for our understanding of climate and its changes.

Through-out this chapter, I have called special attention to the dichotomies that are at play in the wider discourse around climate and its changes. Where ‘weather is not climate’ used to be a slogan that warned one off from attributing changes in one to changes in the other, sentiments have changed: Activists, scientists, and the wider public are increasingly attributing experiences of weather to climate change. As I argued, the concept of ‘attribution’ is doing a lot of work here, reconciling what is scientifically impossible: experience with climate change.

As I went on to argue, climate science’s approach to climate change has been critiqued on precisely the grounds that it renders experiences and conceptualisations of climate invisible which would challenge climate science’s paradigm and the solutions which it suggests. However, in calling for an ‘ontological pluralism’ of climate which does justice to the specificity of individual experiences, the question arises what remains of a shared ‘climate reality’ which is subject to global change?

Identifying this difficulty, others have called for greater attention to the ways in which climate (and nature) resist being conceptually grasped in their entirety. In exceeding human control and comprehension, climate remains in excess of any of the possible plural ontologies whilst still suggesting a shared climate reality-in-excess in which our ontologies are embedded. The final section concluded with an emphasis on the importance of being able to distinguish climate as something apart from society and culture in order to make *changes* in climate politically salient. However, climate science remained the ultimate source of this climate realism, skirting the question how climate and its changes are experienced.

Reflecting on the overall picture I have drawn out in this chapter, two incommensurable responses to the relation between experience and scientific knowledge can be identified: (i) Either the universality of climate change as a global problem is asserted through (climate) science’s promise of objectivity or (ii) the ontological plurality of climate (change) is captured through an emphasis on the heterogeneous ways in which climate is experienced and conceptualised. The price the former, scientific realist approach pays is the inability to account for experiences of climate change; the price the latter, ontologically pluralist approach pays is the relinquishment of a shared climate reality.

Through-out the chapters to follow, I develop a phenomenological realism which promises

a third way: accounting for the universality of the experiential reality of climate and its changes. Phenomenology, I argue, offers an alternative to (climate) science's particular sort of objectivity, an objectivity which remains open to other ways of knowing and experiencing.

I then take the increasing intensity with which climate change is said to be experienced as a serious starting-point for geographical and philosophical inquiry into the nature of climate. Instead of obscuring the contradiction implicit in much (popular) writing on climate change ("global warming weather"), I seek to account for how climate has an experiential reality without reducing climate to an element of subjective experience, as some recent critics of phenomenology in geography might expect.

This much is certain: climate is not given in experience with the same immediacy as weather is. However, it would be wrong to conclude from this that climate simply is not given in experience at all. Through-out this thesis, I follow a phenomenological approach which errs on the side of experience when conceptual categories begin to misalign with what is given. We are witnessing such a moment, I argue, in the face of unprecedented 'weather'. In the history of phenomenology, such an approach has produced influential accounts of consciousness, emotions, the lifeworld or the lived body, which are each immaterial in their own way, eluding the certainty that the perception of an object grants us. I hope a phenomenological account of climate to be of similar use to understanding the current situation.

3 Sauerian Phenomenology; or, the road not taken

I begin the development of my phenomenological approach to climate and its changes by turning to the first mention of phenomenology in Anglo-American geography, namely in Sauer's (1925) *The Morphology of Landscape*. To understand why Sauer turned to phenomenology, I reconstruct the debate around *areal realism* leading up to the *Morphology's* publication. In awareness of the deeper onto-epistemological problems Sauer faced, I go on to develop a Sauerian phenomenology which goes beyond Sauer's own, schematic account. Identifying commonalities between the problem of areal realism and *climate realism*, I conclude by highlighting the necessity of a phenomenological realism to account for climate's reality. In the debates I retrace below, I see a precedent in the history of geography for asking questions of the sort: Is climate real?

3.1 Geography's genealogies and beyond

Foucault ([1971] 1971: 139), in his commentary on Nietzsche's genealogical method, observes that genealogy "operates on a field of entangled and confused parchments, on documents that have been scratched over and recopied many times." This description of genealogy's object rings no less true for the student of the history of geography than it might have for Nietzsche ([1887] 1887) himself, who sought to trace the very origins of 'good' and 'evil'.

As Mayhew (2011: 22) explains, in his application of Nietzsche's genealogical method to the history of geography, seminal geographers, such as Sauer (1925) or Hartshorne (1939a), sought to derive what geography *ought* to be from what geography *used* to be (see also Stoddart, 1981: 4). Leveraging Nietzsche's key insight, Mayhew (2011: 28) argues that such an approach is fundamentally flawed because what geography purportedly was is not a historical fact to be discovered, but a narrative constructed to further the argument of whomever evokes geography's history. The history of geography is, in other words, not found but made.

Perhaps, following Schaefer's (1953: 227) observation, geography is particularly prone to producing 'confused parchments' due to its tendency to continually and "apologetically [...] justify its very existence"; recourse to the disciplines' history being one main mode of justification. The student of the history of geography is then tasked with a difficult, iterative exercise: to not only study what a geographer wrote, but also what they wrote about previous geographers, and what those previous geographers wrote about even earlier geographers etc. Thusly, geography's history is continuously rewritten in the mind of the student too, as some aspects are 'scratched over' whereas others are 'recopied'.

What is true of the protagonists the history of geography studies—that 'what they said' is continuously rewritten—is equally true for geography's concepts. Key geographical terms, such as area, region or landscape, themselves resemble confused parchments; virtually every major contribution in geography to the study of area, region or landscape begins with a laborious definition and reconstruction of its corresponding term. A genealogical approach asks us to recognise this "multiplicity of the social and conceptual origins of the concepts and categories we deploy." (Mayhew, 2011: 28)

3.1.1 Sauer's Morphology of Landscape

Sauer's *Morphology of Landscape* is a particularly confused parchment in and of geography's history. Penn and Lukermann (2003: 234) note how an "aura of impenetrability has always surrounded 'The Morphology of Landscape' in English-speaking countries". This aura results,

in part, from the impenetrable genealogies of the text itself for an English-speaking audience. As Mayhew (2011: 21) observes, both Sauer and Hartshorne were dependent “on German geographical writings to construct their visions”; writings that were and remain largely unavailable in English translation. Hartshorne’s, and to a lesser extent Sauer’s readings of German geography consequentially defined how geographers such as Ritter, Hettner or Passarge came to be understood in Anglo-American geography. Harvey and Wardenga (2006) have shown how Hettner’s project was, for instance, misrepresented by Hartshorne and consequently misunderstood in later Anglo-American geography more widely.

Most impenetrable is Sauer’s use of ‘phenomenology’. Although the main body of the *Morphology* starts with the programmatic statement that “[a]ll science may be regarded as phenomenology” (Sauer, 1925: 20), Sauer’s work is not remembered as phenomenological in geography. Instead, phenomenology is canonically said to have been introduced into geography much later, with the emergence of Humanistic geography and its critique of geographical positivism in the 1970s and 80s (Pickles, 2009).

One major reason why Sauer’s phenomenology is largely forgotten is of his own making: Sauer takes the concept of phenomenology from Keyserling (1910), an obscure German academic who is not part of the phenomenological tradition in philosophy. The threads between authors and ideas, on which a genealogical approach relies, simply do not extend between the geographical phenomenology of Sauer and Humanistic geography, aside from pro forma mentions of Sauer’s introduction of the term ‘phenomenology’ into geography by the latter.

Unfortunately, Sauer’s own later work does not help clarify the matter. Although the *Morphology* “has been taken by some as the hallmark statement of the Berkeley School” (Williams, 2009a: 301), influenced by the Berkeley anthropologists Alfred Kroeber and Robert Lowie (Duncan, 1980: 182), Kenzer (1985: 259) has questioned the influence of Kroeber and Lowie on the text, given that the *Morphology* was written only a year after Sauer’s arrival in California and no evidence for such influence can be found in the archival record (Kenzer, 1987: 470). Furthermore, Leighly (1976: 340) highlights how Sauer “emphatically deprecated and disavowed the views he set forth in the ‘Morphology’” later in his career (see also Kersten, 1982: 69). The *Morphology* was “not the plot of a new course” to follow, but rather the “terminus of Sauer’s mental development at Ann Arbor” (Leighly, 1976: 340), where he taught previously. It is consequently unsurprising that ‘phenomenology’ makes no further appearance in Sauer’s work.

3.1.2 The limits of genealogy

Confronted with Sauer's *Morphology*, the genealogical method reaches its limits. As my analysis of the *Morphology* will show, relying only on what Sauer wrote is insufficient in order to understand the full, unrealised potential of Sauer's morphological project. The interpreter of the *Morphology* must, I argue, engage in a Benjaminian exercise of reading what Sauer never wrote (Benjamin, 2002: 416; for a similar approach, see also Entrikin, 1984).

Reading what was never written is not an exercise in arbitrariness; one merely requires a different interpretative pivot than the single written text. Whereas a genealogical approach focuses on the confused parchments geographers leading up to Sauer and Sauer himself produced, I suggest focusing on the issues and problems that led to the production of said parchments in the first place. Although Nietzsches' *Genealogy of Morality* teaches us that 'good' and 'evil' are not facts to be discovered, but narratives told, the underlying fact that spurs on the production of said narratives/parchments is a universal problem humanity faces: our actions have outcomes and consequences which are valued differently. This fact requires what the phenomenologist Waldenfels ([2006] 2011) would call a *productive response* from us: a response that includes more than that to which it is answering. In other words, the problem Nietzsche confronts—morality in general—is not subject to the same sort of genealogical relativism the responses to the problem—specific morals—are.

By analogy, one universal problem geographers in the 19th and 20th century faced is: Are geography's objects of analysis—areas, regions, landscapes—*real*? Whereas Mayhew (2011: 28) argues that Sauer legitimates his understanding of geography as chorology by invoking the Ancient Greek origins of geography, I argue that recognising the problem of *areal realism* is prerequisite in order to understand Sauer's morphological project. By reconstructing the debate Sauer responded to, the contributors to which he cites in the *Morphology*, I argue that Sauer had his finger on a deep onto-epistemological problem to which phenomenology holds the answer, without himself having the requisite concepts and theories to identify the problem as such. It is perhaps for this reason that the *Morphology*, as Penn and Lukermann (2003: 238) note, is not "a study that moves toward an architectonic vision of reality", but rather "ought to be read as a source book of geographical issues—a compendium of insights and sketches of problems and their possible solutions".

3.1.3 "To read what was never written"

In this chapter, I will (re-)construct Sauerian phenomenology; a road not taken in geography.

To read what was never written means, in this instance, to interpret the phenomenology Sauer *might* have developed, had he theorised his phenomenological and morphological approach further, and the broader phenomenological movement that might have emerged out of it.

I hence take the *Morphology* as a starting point to argue that at the heart of the debate around areal realism lies a phenomenological problem: geographers argued about the unity of area, regions or landscapes independent of human cognition, without recognising the phenomenological insight that (i) human cognition and reality are inseparably entangled and that (ii) we have no access to reality other than by cognition.

Sauer's invocation of phenomenology to better understand the *physical* as well as human geography of an area sets his approach apart from the phenomenology of Humanistic geographers, who understood phenomenology to be the study of 'subjective experiences' (see also Section 5.1.2). Sauerian phenomenology then corrects the subjectivist bias in geography's appropriation of phenomenology by highlighting that phenomenological accounts are about both subject and object, they elucidate both mind and world. Correcting this bias is also an indirect response to the most recent critics of phenomenology, post-phenomenologists, who seek to push beyond the boundaries of subjectivity phenomenology is supposedly shackled to.

Apart from elucidating the nature and scope of phenomenology in geography, this chapter also contributes to an initial understanding of climate's phenomenology. As I will show, many problems that beset the study of areas, regions or landscapes equally beset the study of climates: What properties constitute climate? Where does one climate begin and another end? On what scale do climates occur? Are climates experienced or measured? Sauer's morphological approach provides answers to these questions as well. Given our contemporary understanding of climatology, it might be surprising (and promising) that Sauer (1925: 30) viewed climatology as a model for his phenomenological approach, for "a general geographic morphology."

3.2 Is area real?

To question the reality of area, region, landscape or climate may, to the uninitiated reader, appear perplexing. To help motivate my (historical) study of these questions in the following section, i.e. if areal units of any shape or size exist, I briefly outline the consensus in more recent regional geography, namely that regions are not real, and draw out the philosophical issues raised in recent philosophy of geography of relevance to the question of areal realism.

3.2.1 Regional geography, old and new

The question of areal realism was “once a hot topic to argue about” (Hägerstrand, 1984: 378). “These debates are not only a historical curiosity but are fitting illustrations of the struggle over legitimate conceptualizations.” (Paasi, 2002: 804)

Hartshorne (1939b: 451), in his detailed recollection and adjudication of the early debates, concludes that “regional entities [...] are entities only in our thoughts”, that area “is only an intellectual framework of phenomena, an abstract concept which does not exist in reality.” Suggesting a link between the question of areal realism and climate realism, Hartshorne (1939b: 499) reaches a similar conclusion regarding climate, suggesting that

we have simply been misled by the fact that our language uses one word, climate, to include factors which, whatever association they may have genetically, are largely independent in their actual variations and in those effects of the variations with which we are primarily concerned.

Hartshorne is far from an outlier when it comes to his assessment of the reality of areal units.⁹ Finch (1939: 12), in his *defence* of regional geography against its critics before the American Association of Geographers, calls regions “mental constructions rather than clearly given entities”, and cites regional geographers Passarge and Garnö, who respectively argued that “geographic realms are ideal realms” and “geographical research forms the entities of which it is in need” (Passarge and Granö cited in Finch, 1939: 12).

Analysing two more recent Presidential addresses before the American Association of Geographers (Hart, 1982; Lewis, 1985), Pudup (1988) draws attention to the continued relevance of the question if regions are real. Pudup (1988: 374) criticises what she and others

⁹ For reasons of clarity and comprehensibility, I will not consider the differences between areas, regions, and landscapes. Instead, I will focus on the very possibility of identifying *any* aerial unit: area, region or landscape.

have called ‘traditional regional geography’ for a “chronic neglect of reflection upon, and definition of, traditional regional geography’s object of study.” Hart (1982: 21-22), for instance, affirms the impossibility of defining regions.

Regions are subjective artistic devices, and they must be shaped to fit the hand of the individual user. There can be no standard definition of a region, and there are no universal rules for recognizing, delimiting, and describing regions. Far too much time can be wasted in the trivial exercise of trying to draw lines around “regions.” (Hart, 1982: 21-22)

Pudup (1988: 379) argues that ‘new’, reconstituted or reconstructed regional geography, which emerged in the 1980s, offers a more critical and ontologically accurate account of how regions are real.

Because the historical constitutions of regions are continually transformed, the foci of analysis in reconstructed regional geography is less the region as a classifiable geographical object [...]. Instead the focus is regional formation as a dynamic historical geographical process. (See also Massey, 1995: 104; Thrift, 1990)

In defining regions through the processes which constitute them, ‘new’ regional geographers follow Hart’s (1982) ‘traditionalist’ insight that too much time has been wasted on ‘drawing lines around regions’. Instead of delineating static regions, ‘new’ regional geographers, such as Gilbert (1988), tie the emergence of regions to “the spatial organisation of social processes associated with a specific mode of production”, “settings for social interaction”, and “cultural relations between a specific group and a particular place” (Paasi, 1991: 239-340).

Emphasising the cultural in ‘new’ regional geography, Paasi (1991: 241) argues that “[r]egions and communities are spatially constituted social structures and centres of collective consciousness and socio-spatial identities.” Emphasising the historical in ‘new’ regional geography, Paasi (1991: 242) defines “regions and localities” as “a complex synthesis or manifestation of objects, patterns, processes, and social practices derived from simultaneous interaction between different levels of social processes”. On a more critical note, Paasi (1991: 242) shows that

the concepts of region provided by the ‘new regional geography’ still tend to be partly what Sayer [...] calls ‘chaotic conceptions’. The spatial and the social are configured in an intertwined process, but no conceptualisations have been put forward as to the constitution of spatiality in this process. Instead the tendency has been to ‘explain’ the

spatial exhaustively in terms the ‘social’—even if it is now commonly accepted that ‘space makes a difference’ or ‘geography matters’. (Paasi, 1991: 243; see also Sayer, 1984: 138; Paasi, 2002)

Not unlike traditional regional geography, then, ‘new’ regional geography too lacks a coherent methodology or object of study. Sayer (1989: 253), for instance, points out that ‘new’ regional geography “represents only the loosest of coalitions of interests and as such it can most easily be situated through its opposition to other schools”, namely traditional regional geography, spatial analysis, and “theoreticist tendencies in radical geography and social science”.¹⁰

The uncertainty surrounding ‘new’ regional geography’s method and object leads Holmén (1995: 47) to ask “what is ‘new’ and what is ‘regional’ in this allegedly new regional approach.” If ‘new’ regional geography defines itself in contrast to other (regional) geographic approaches, then a nuanced and accurate understanding of traditional regional geography is important. However, as Holmén (1995: 48) argues, the critiques brought forward against traditional regional geography seem “quite stereotyped and derogative”, characterising traditional regional geography “as ‘isolationist’ (Johnston, 1984), ‘static’ (Gilbert, 1988), merely ‘descriptive’ (Brown, 1988), ‘conservative’ (Peet and Thrift, 1989) and ‘theoretically bankrupt’ (Sayer, 1989)”. Holmén (1995: 49-50) revisits the origins of regional geography—Varenius, Kant, Ritter, Vidal de la Blache—in order to highlight the complexity of traditional regional geography,¹¹ and possible starting points for his own alternative approach: “‘semi-traditional’ regional geography” (Holmén, 1995: 52).

Picking up Paasi’s second point of critique, Holmén (1995: 51) goes on to argue that ‘new’ regional geography conceptualises regions as mirroring larger scale social processes; “treating place and region as ‘mirrors’ means that they are reduced to mere backdrops to the predetermined societal processes we have set out to explore.” Are these regions then, Holmén (1995: 53) asks, not shaped to fit the hand of the individual user? If so, “‘new regional geography’ seems to offer nothing new.” (Holmén, 1995: 53)

Consequently, Holmén (1995: 52) suggests an alternate approach which emphasises both “the human and natural sides” of settings or regions. Reconnecting “the two sides of reality” is of particular import, according to Holmén (1995: 52), in a time when “environmental hazards

¹⁰ Similarly, post-phenomenology has more recently been defined through its opposition to phenomenological core concepts, and not through a coherent method/object of study (Ash and Simpson, 2016; Hepach, 2021).

¹¹ Ironically, in following Hartshorne’s (1939a; 1939b) reconstruction, Holmén himself misrepresents Ritter’s approach to regions, which I later reconstruct.

are about to overwhelm us”.

A revitalized regional geography, well founded in material reality, could help saving us from the dream-worlds of narrow natural and social sciences. It is thus time to reconnect regional geography to Kant’s holistic context. (Holmén, 1995: 58)

Making his own ontological commitments explicit, Holmén (1995: 53) argues, following the path laid out by Hartshorne (1939a) and Hart (1982), that

Regions are mental constructs and they naturally vary both in size, content and character. Regions, further, can be of many kinds, nodal, functional, homogenous, etc. but they are hardly ‘natural’. The notion that “regions are created, reproduced and finally disappear from the world scene” (Taylor, 1991) is important. Hence, regions can not be treated as ‘given’. [...] Whatever type and size of region we talk about will depend on the purpose of the study undertaken. Hence, regions must be designated to ‘fit the hand of the individual user’ and the choice and delimitation and delimitation [sic!] of region must be motivated. There is nothing strange about that. Just like a researcher must clarify his theoretical approach, he should also show how the region of his choice makes sense for the study undertaken. Hence, regions are always disputable—as are theories.

The reader is again faced with a rather chaotic or “fuzzy concept” (Markusen, 1999) of what a region is. Although the description of a given region should always be open to debate, the very concept of region being disputable makes for a difficult starting point for regional geography, (semi-)traditional or ‘new’. An ambiguous concept of region would make it impossible to ‘reconnect regional geography to Kant’s holistic context’, where the concept of region would have to be (unambiguously) integrated into an overarching architectonic geography, as I show below.

Furthermore, it is difficult to square Holmén’s (1995) emphasis on the importance of founding regional geography in ‘material reality’ with the characterisation of regions as ‘mental constructs’, particularly when his criticism of ‘new’ regional geography is its dismissal of the physical.

This brief, selective account of how the very nature of regions has been contested shows the continued relevance of questioning the reality of regions, and the agreement on all sides that regions are *not* real. In partial agreement with Holmén (1995), I argue that revisiting the early debates in regional geography are instructive for understanding what is at stake when we ask if regions are real. Contrary to Holmén (1995), I will argue that areal units, such as regions,

are in fact real.

3.2.2 Ambiguous geographies

One line of argument critics of areal realism and of landscape geography in particular advance concerns the ambiguity of the very words we use to denote areal units. As I mentioned above, Hartshorne traces the problem of delineating climates back to a problem of language: Perhaps, Hartshorne (1939b: 499) suggests, the words we use sometimes mislead us to assume there exist objects in the world that correspond to a given word, such as ‘climate’.

This argument is central to Hartshorne’s critique of areal “Wholes” or units: areas, regions or landscapes. As Livingstone (1993: 307) notes, “Hartshorne sought to expose the incoherencies in alternative definitions of the field by dilating on their terminological inexactitudes.”

Not only, then, does Hartshorne (1939a: 326) argue that the use of the word ‘landscape’ in everyday parlance mistakenly leads geographers to assume that there is such an object called ‘landscape’ to be discovered (see also Hartshorne, 1939b: 562). Hartshorne (1939a: 325) goes so far as to suggest that geographers of landscape use the ambiguity of the term to their advantage:

The human mind wishing to arrive at certain predetermined conclusions prefers to deal with words whose ambiguity of meaning permit it to convince itself that the conclusions desired are arrived at logically.

Applying his language argument to region and area more broadly, Hartshorne (1939b: 571) argues that

the attempt to develop generic concepts *of* areas [...] rests on the fallacious assumption of the area as an actual object or phenomenon. We are misled by our terminology. [...] The area itself is not a phenomenon, any more than a period of history is a phenomenon; it is only an intellectual framework of phenomena, an abstract concept which does not exist in reality.

In his methodological discussion of the nature of geography as a science, Hartshorne (1939b: 552) insists that the

scientific ideal of certainty commands that the terms and concepts of description and relationships be made both as specific and as certain as possible—we cannot develop a

sound structure on a marsh foundation in which ambiguous concepts shift their meaning whenever pressure is applied to them, and concepts apparently specific prove to be but dubious analogies.

Hence, ‘area’, ‘region’, and ‘landscape’ are disqualified as objects of geographic study in virtue of their ambiguity.

3.2.3 Vague geographies

Elsewhere in his critique of landscape, Hartshorne (1939a: 390) cites Crowe’s observation that “vagueness is indeed implicit in the landscape idea.” (Dickinson and Crowe, 1939: 15)

Ambiguity and vagueness are, importantly, two very different concepts. Understanding this distinction is crucial to understanding the ways in which area, regions and landscapes are real, and surfaces a deeper misunderstanding underlying Hartshorne’s (1939a) critique.

As Sorensen (2018) explains in his philosophical account

Words are only vague indirectly, by virtue of having a sense that is vague. In contrast, an ambiguous word bears its ambiguity directly—simply in virtue of having multiple meanings.

To use Sorensen’s (2018) example, the word ‘child’ is both ambiguous and vague. It is ambiguous in that ‘child’ can mean both “‘offspring’ and ‘immature offspring’”. Whereas the meaning ‘offspring’ is not vague—someone either is or is not the child of someone else—, the meaning ‘immature offspring’ is vague “because there are borderline cases of immature offspring”—someone may or may not be behaving ‘like a child’.

A helpful criterion Sorensen (2018) introduces to distinguish vague from ambiguous concepts is dependency on the speaker’s discretion. Ambiguity can be resolved “without departing from literal usage”, whereas vagueness cannot. I can, for instance, clarify that I mean ‘child’ in the sense of ‘immature offspring’. I cannot, in a similar fashion, resolve the vagueness of ‘immature offspring’ by, for instance, insisting that “‘child’ literally mean anyone under eighteen [...]. That concept is not, as it were, on the menu corresponding to ‘child’. [I] would be understood as taking a special liberty with the term to suit a special purpose.”

These questions are of special importance to geography because “the language of geography is massively vague” (Varzi, 2001a: 123). Hartshorne’s focus on areas, regions, and landscapes as objects of critique obscures the fact that the problem he identifies—that we are guided by language to presume units in nature—applies to most if not all of geography’s objects

of study.

Imagining a line denoting the varying degrees of vagueness inherent in geographic concepts, area, region, and landscape might be on the far end, perhaps only surpassed by climate, and hence easy objects of criticism (see also my own illustration in Figure 8). Less vague but still subject to the same problem of ‘borderline cases’ are, however, as conspicuous objects of geographic research as mountains.

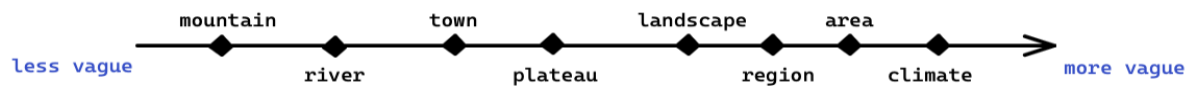


Figure 8: Degrees of vagueness

As Smith and Mark (2003: 411) observe in their aptly titled article “Do mountains exist?”, mountains do not satisfy the criteria for “detached objects”, such as organisms and artefacts.

Mountains do not have determinate, prominent, and complete boundaries. Although the boundaries between the mountain and the air above its upper slopes may be determinate, prominent, and crisp; it is usually the case that, as we proceed downwards towards the foot of the mountain, no single candidate boundary is distinguishable at all. And similarly in the order of kinds: the category *mountain* is not distinguished in bona fide fashion from neighboring categories such as *hill*, *ridge*, *butte*, *plateau*, *plain*, and so on. [...] Indeed, the kind *mountain* begins to seem more like such kinds as *neighborhood* or *locality*—a kind that is demarcated, both as a type and in its tokens, as a mere reflection of human habits of perception and action (Montello, 2001). These habits of perception and action may, moreover, vary from one culture to another, so that what is called a ‘Berg’ in German may not coincide perfectly with what is called a ‘mountain’ in English. In this sense, the question ‘Do mountains exist?’ is not quite as foolish as it may have earlier appeared. (Smith and Mark, 2003: 412)

Smith and Mark (2003) are not alone in questioning the existence or reality of mountains; other philosophers of geography turn to “Snowdon” (Sainsbury, 1989: 100), “Mount Kinabalu” (Thomasson, 2001: 150) or “Everest” (Varzi, 2001b: 50).

Returning back to the scale of vagueness, proceeding from ‘mountains’ onwards, Varzi (2001b: 49) concludes that

Vagueness is a pervasive phenomenon of human thought and language and the world of geography is not exempted from its grasp. Not only “mountain” but virtually every geographic word and concept suffers from it: How small can a *town* be? How long must

a *river* be? How many islands does it take to have an *archipelago*? (Varzi, 2001b: 49)

Perhaps comfortingly, philosophers of geography agree that mountains exist, and that the vagueness inherent in geographic concepts is a property of language, not reality. Geographic vagueness is semantic and not ontological (Varzi, 2001b: 52). Instead of viewing vagueness as a danger to the very foundation of geography as a science, Varzi (2001b: 50) argues that vagueness is simply a basic fact of geographic research.

Normally we refer to a region without any need to *think* of its limit or boundary, never mind considering the boundary as being at some definite place. We know how to use geographic terms without being able to provide a precise explanation of the grounds for this competence. [...] The philosophically interesting and by no means ludicrous question is: How does this work? (Varzi, 2001b: 50)

The problem of areal realism is, I argue, closely linked to the question of how this works, i.e. how vague concepts are linked to reality. Hartshorne's critique of landscape geography is not completely off the mark in the sense that it is possible for a geographer to not define their terms—such as landscape—well, and consequently utilise ambiguity in order to cover over inconsistencies. One might, for instance, use different criteria to delimit landscape *x* and landscape *y*. In this case, ambiguity could simply be solved by committing to one set of criteria.

Even if one were to resolve all ambiguity, however, one would not arrive at an exact definition of 'landscape' that would satisfy Hartshorne's "scientific ideal of certainty". Critics of areal realism across the history of geography bemoan this very point, as I will later discuss in detail: There are no universal criteria with which one could divide the earth into individual, unique objects of study, e.g. into areas, regions or landscape.

The philosophical analysis of geography's vagueness, however, shows that even though we are unable to establish universal criteria for distinguishing mountains, rivers, and regions, we are still able to investigate them scientifically. To explain this competence requires, as Smith (2001: 113) has argued, "a general theory about the objects of human cognition". Put differently, one needs to understand how we arrive at vague concepts, even as we are unable to delimit an exact, corresponding object. Crucially, human subjectivity or cognition here appear to play a more major role than when delimiting an object with exact *bona fide* boundaries, such as an organism or an artefact. Geography's objects must somehow be, to use Plato's turn of phrase, carved out of reality (Plato, *Phaedrus*, 265e).

As Thomasson (2001: 149) has pointed out, this apparent "mind-dependence" of human

geography's objects

raises certain crucial problems for the epistemology and ontology of geography, leading some to doubt whether geography can really be considered a science involved in making discoveries about the world, and whether or not the purported facts studied by geographers should really be considered as existing at all.

As I have shown above, the same problem presents itself for the objects of physical geography as well. Thomasson (2001: 157) concludes that the problem of 'mind-dependence' is partially resolved by questioning "the assumption of a simple dichotomy between the independent entities of nature and imaginary objects that 'exist only in our minds'." Instead, Thomasson (2001: 157) argues, geography's objects are somewhere "in-between".

Lack of clarity around the nature of mind-dependence has, I argue, led geographers to assume that area, region, and landscape are mental constructs. Through the lens of vagueness, however, it is easier to recognise that area, region, and landscape might be 'mental constructs' in a similar way to mountains or rivers; and few geographers would argue that mountains and rivers are not real, or that they only exist because we were misled by language.

What accounts for the difference in ease between distinguishing or delimiting mountains and landscapes is the relative conspicuousness of their appearance. Whereas mountains and rivers have some relatively crisp boundaries that allow one to distinguish them from their broader environment, areas, regions, and landscapes are more inconspicuous. One should not, however, mistake the degree of conspicuousness with greater mind-dependence; as if objects were simply mental constructs because they are more difficult to recognise. To recognise the reality of area, region, and landscape requires, as I will show with the help of Sauer, phenomenological competence: one must 'learn to see' them. The "general theory about the objects of human cognition" (Smith, 2001: 113) I introduce in order to account for the reality of area, region, and landscape is hence phenomenology.

3.3 German voyages into vagueness

Having detailed the general problem of vagueness in geography, this section deals with how this problem was faced with in the history of geographical thought, identifying distinct resolutions to the problem of areal realism along the way. In light of the broader aim of reconstructing Sauerian phenomenology, I discuss those elements of German geographic thought which led up to and are cited in Sauer's *Morphology*.

On the surface, I consequently tell what Stoddart (1981: 2) has called (and criticised as) an internalist history of geography, in that I write “from the perspective of the present” and “identify a continuous series of men and ideas, linked together in chronology and content” (see also Penn and Lukermann, 2003). However, in contradistinction to an internalist history, which gives “little or no attention to philosophical or epistemological issues”, my own approach—as the previous sections of this chapter have shown—is guided by the philosophical issues that underlie and motivate the content which links the geographers I discuss together. Instead of “cataloguing [...] people, institutions and publications”, I set out to “emphasize the development of problems and theories” (Stoddart, 1981: 3; see also Wright, 1926).

3.3.1 Kant's physical geography

The question of areal realism, posed by German geographers in the 19th century, can be traced back to an unresolved tension latent in Kant's ([1802] 1802) outline of the nature of physical geography as an academic discipline.¹²

In the introduction to his *Physical geography*, Kant ([1802] 1802: §2, 446) first explains how a science constitutes itself:

Idea[s] are architectonic; they create the sciences. Anyone intending to build a house, for instance, will first form a conception of the whole, from which all the parts will subsequently be deduced. (Kant, [1802] 1802: §2, 446)

Ideas are what allow science to be the acquisition of systematic knowledge, as opposed to a mere aggregation of facts (Kant, [1802] 1802: §2, 446). With respect to geography, this is a particularly common anxiety: the value of geography should rest, the argument goes, in more than the mere collection of (regional) trivia. A frustration with and “condemnation of mere

¹² Following Livingstone (1981) and Loudon (2014), a different line of argument might trace the *philosophical* influence of Kant on the question of areal realism (see also Elden and Mendieta, 2011).

fact-gathering” (Bowen, 2009: 211) becomes evident in the work of Forster ([1777] 1777), who’s work Kant references through-out his *Physical geography*.

They had their wish; facts were collected in all parts of the world, and yet knowledge was not increased. They received a confused heap of disjointed limbs [sic], which no art could reunite into a whole; and the rage of hunting after facts soon rendered them incapable of forming and resolving a single proposition; like those minute enquirers, whose life is wholly spent in the anatomical dissection of flies, from whence they never draw a single conclusion for the use of mankind, or even of brutes. (Forster, [1777] 1777: 9)

Kant goes on to explain that

In the same way, our present introduction serves as an idea for knowledge of the world. What we are doing here is making an architectonic concept for ourselves, which is a concept whereby the manifold parts are derived from the whole. The whole, in our case, is the world, the stage for all our experiences. (Kant, [1802] 1802: §2, 446-447)

The concept Kant develops—geography—provides a conceptual scaffolding for geographic research: any individual fact or part collected only becomes a *geographic* fact in virtue of its relation to geography as a whole.

Going into further detail, Kant ([1802] 1802: §3, 447) explains that geography is the *description* of places (as opposed to history’s *narration* of events), and can be divided into *topography* or the “description of particular places on the earth”, *chorography* or “the description of regions and their peculiar features”, *orography* or “the description of mountain ranges”, and *hydrography* or “the description of the waters.”

The idea of ‘geography’ is then composed of nested ideas which form their own wholes, i.e. the idea of ‘chorography’ has as its corresponding whole ‘region’, ‘orography’ has ‘mountain ranges’ etc. Topography, chorography, orography, and hydrography then function as architectonic concepts in their own right, giving shape to different areas of geographic research.

§4 of Kant’s introduction becomes the site of the aforementioned tension. Following his conviction that “all our knowledge must be allocated to its proper place”, Kant distinguishes between logical and physical science in order to situate geography: Whereas logical science divides knowledge according to concepts, physical science divides knowledge according to time (history) and space (geography).

Physical geography, the “geographical description of nature” then

[...] refers to the *places on earth where a thing is actually to be found*. [...] In sum, we are concerned with nature, the earth itself, and those places where things are actually encountered. (Kant, [1802] 1802: §4, 448, emphasis MH)

Returning back to the problem of areal realism, Kant's descriptive approach to geography takes the reality of geography's objects for granted; it brackets the logical/conceptual questions what regions, for instance, are. Analogously to the objects the discipline of history describes (events occurring in time), the objects of geography (the earth, but also its parts: regions, mountain ranges, waters) are assumed to be simply given. Although it is certainly possible that geographical (and historical) descriptions can be *mistaken*, Kant's physical geography does not allow for the very categories which inform description to be false. This problem would be conceptual, not descriptive in nature (see also Bowen, 2009: 207). Hence, just as geography's corresponding whole, the earth, is real, so too are the corresponding wholes of chorography or orography real: regions and mountain ranges.

3.3.2 (Dissecting) earth-individuals

3.3.2.1 Carl Ritter

Scepticism toward "compendium geography" or the mere "enumeration of the curiosities" (Ritter, 1862: 22, translation MH) is a guiding principle of Ritter's geographic work. He insists that "knowing the relations of the whole is what first leads to science, not the description of parts" (Ritter, 1862: 10, translation MH; see also Hözel, 1896: 385; Bowen, 2009: 239).

However, in contrast to Kant, Ritter was aware of the ontological and epistemological difficulty regions present geographers with: the impossibility of arriving at regions through description alone. Ritter's methodological argument in his *Erdkunde* proceeds through a number of stages, which take place on the 'logical' or 'conceptual' side of Kant's dichotomy.

First, Ritter dissolves the Kantian distinction between history and geography as two separate descriptive sciences. Instead, he arrives at his areal units, "earth-individuals" [Erd-Individuen] (Ritter, 1822: 10, translation MH), by unifying historical and geographic destiny:

what is characteristic of the geographic nature immediately follows from what is essential of the historical nature of these parts of the earth [Europe and Asia], and for this very reason, both coincide as a *unity* [...] and not as a *coincidence* [...]. The name of the Old World in the most actual sense applies only to this limited region and rightly belongs to

it, because on it the greatest and highest, of which we know in the history of humankind, has formed, from the ancient wisdom of the Indians to the recent uprising of the Germanic tribes. (Ritter, 1822: 14, translation and emphasis MH)

Ritter is aware that description alone cannot refute that the historic events and the geographic composition of Asia and Europe might simply have *coincided* in what is called the ‘Old World’. To guarantee the *unity* of earth-individuals, to secure them as *real*, as opposed to as mental constructs, Ritter, in a second step, invokes the belief in a ‘higher order’

The earth is independent of humankind, even without it and before it, earth is the scene of natural events; the law of their formation cannot originate from humankind. In a science of the earth, the earth itself and its laws must be questioned. The monuments erected by nature on earth and earth’s hieroglyphics must be looked at, described, their construction deciphered. Earth’s surfaces, its depths, its heights must be measured, its forms arranged according to their essential characters [...]. Then the result would emerge from each individual link, from each series, the truth of which would prove itself in local appearances of nature and be mirrored in the life of those peoples whose existence and peculiar character coincide with this or that series of characteristic earth formations. For, *determined by a higher order*, peoples as well as individuals, under the influence of an activity of nature and reason, emerge from the spiritual and physical element, into the all consuming circle of world-life. (Ritter, 1822: 3-4, translation and emphasis MH)

Although Ritter, here and elsewhere, insists on the independence of earth from humankind, on areal units not exuding from human imagination, and on proceeding from “distinct facts” in order to then arrive at “laws and the more general” (Ritter, 1822: vi, translation MH, see also 8, 23-24)—a fact which Hartshorne (1939a: 230-236) emphasises in his defence of Ritter—, this whole approach is undermined by his presupposition that the divisions of earth are not coincidental but necessary, that the earth’s surface is divided into areal units, into ‘hieroglyphics’ which can be read and made sense of in their relation to the peculiar character of peoples. As what follows in Ritter’s introduction and in his later works shows, the language of a ‘higher order’ governing the earth, or of the surface of the earth resembling a palimpsest which can be read, are not mere figures of speech. There is an answer to what guarantees the coherency of earth’s physical formation and the corresponding spiritual development of peoples, to the question who ‘wrote’ earth’s hieroglyphs, to how geography and history cohere in areal units. What “gave philosophical muscle to Ritter’s regional ideology”, Livingstone (1993: 141) observes,

was the teleological foundation on which the whole edifice rested. To study geography was to explore nothing less than the very laws of the Creator, who was the author of the human story, the architect of the world-plan, and the builder of humankind's earthly home. (Livingstone, 1993: 141)

In a third step, Ritter then elevates this higher order to the level of divinity, parallelising knowledge of God with knowledge of the earth.

As God was recognized and worshipped in the beginning only in his individual effects, without the mortal eye having seen him itself, the conflict of the thousandfold fissured forces of nature will be dissolved, the fog, which for the time being hides their unity from our view, will disappear, and this will enter human wisdom's sight. With this *faith*, every striving for an overview of the effects of nature in their coherence, however weak it may be, if it is only guided by the spirit of truth, can be fruitful [...]. (Ritter, 1822: 5, translation and emphasis MH)

This analogy shifts, in later writings, into reality when Ritter describes the earth as “one great organism” (Ritter, 1862: 1, translation MH), a “scene of divine revelation” (Ritter, 1862: 11, translation MH) organised on “a higher level” (Ritter, 1862: 12, translation MH), as a “*world of God*” (Ritter, 1831: 518, translation MH; on Büsching's earlier physico-theology, see also Livingstone, 1993: 108).

Ritter makes the underlying ontological (and theological) assumption of his work most explicit when he discusses his work's “ideal background” (Ritter, 1822: 22, translation MH). The truth of his work, Ritter writes, does not rest “in the truth of a concept, but in the complete content of all truth for [him], thus in the realm of faith.” (Ritter, 1822: 23, translation MH) His work fundamentally rests on “an inner perception, which developed out of his life in nature and in the human world.” (Ritter, 1822: 23, translation MH)

The “essence of this *perception*”, Ritter goes on to argue, stands “in contrast to the sharp and distinguishing *concept*”, given that perception “lends itself more to combination and construction, through which the whole form of the present work was made possible.” (Ritter, 1822: 23, translation and emphasis MH)

Appealing to faith is, I argue, Ritter's response to the problem of vagueness inherent in the concept of region or ‘earth-individual’. To provide a “sharp and distinguishing concept” of region or “earth-individual” would require a universal set of criteria with the help of which a region could be delimited. Instead, the vagueness of regions is met by Ritter with the invocation of an ‘inner perception’ which grasps an areal unity in some sort of pure intuition. Ritter's

appeal to faith and a higher order is an attempt to explain this perception without developing, as Smith (2001: 113) suggests, “a general theory about the objects of human cognition”, which would help Ritter explain how this ‘perception’ works.

3.3.2.2 *Julius Fröbel*

The consequences of Ritter’s epistemology were not lost on his contemporaries. Fröbel (1831; 1832), arguably his most vocal critic, fundamentally questioned Ritter’s comparative geographic approach, taking aim at his concept of ‘earth-individuals’; the objects of Ritter’s comparison.

Fröbel is particularly critical of the way Ritter arrives at his ‘earth-individuals’, eliding the peculiar character of a region with the concept of individuality. In Fröbel’s mind, the “concept of the peculiar character, of the physiognomic or the characteristic is much more fluid than that of individuality” (Fröbel, 1831: 501, translation MH). In appealing to character, Fröbel (1831: 501) argues, we leave the realm of science and enter into aesthetics. Trying to infer individuality from a particular character would then be fundamentally unscientific: “*Scientifically* [...] it is first necessary to *develop* the local character of nature in some region on earth’s surface out of its particulars” (Fröbel, 1831: 502, translation MH), as opposed to taking the character of an area as a given.

Fröbel drives this point home by analogising comparative or regional geography to another comparative science, anatomy:

To even regard a region as a geographical individual, because the natural life within it acquires a local character, would be just as wrong as if one wanted to regard an arm as an individual, because the general construction of the bone of this limb, of the muscles which cause its bending, of the vessels which nourish it, [...] has its peculiar formation, by which one must recognise, for example, a bone of it immediately as an arm bone. [...] [I]s it not the essence of all human science to sacrifice the general impression [or inner perception, MH] to analysis, so that the former can be later complied into a new and clearer general view? When the anatomist cuts the body, they must first detach the parts from their natural connection and study the systems in dead raggedness; and only by building physiology on what they thus find, will it be possible for physiology to comprehend these systems in their vital counteractions. Only the dissolution of the ‘spiritual band’, only the disruptive hand of analysis leads, if anything, to the discovery of life; and if it does not lead there in the highest sense of the word, then this only means that life itself is incomprehensible. But a degree of incomprehensibility will always

remain for us. It is this degree which erects the boundary of human science. *Scientifically*, we do not want to go beyond this boundary. Art may turn to feeling [...] in its works; but for science it is forbidden, even if science's field is consequently shrunken; because it is science's main purpose to distinguish the self-acquired [...] discoveries from the dark impressions which *must* be analysed, from the aesthetic perceptions which *cannot* be analysed [...]. (Fröbel, 1831: 501-502, translation MH)

Fröbel's analogy takes us to the heart of the epistemological problem Ritter's approach presents us with: If the (areal) units of analysis—in Ritter's case 'earth-individuals'—are not analytically arrived at, if they do not resemble exact concepts, but rather vague impressions or perceptions, then the whole comparative project—and Kant's chorography—rests on "a marsh foundation" (Hartshorne, 1939b: 552). Following Fröbel's line of argument, the very areal units of Ritter's analysis belong, at best, to the realm of aesthetic perceptions.

Ritter himself says that he follows the path of perception, which constructs and combines in contrast to the sharp, distinguishing concept. Along this synthetic path, on which one proceeds entirely according to the *view of common life*, the analysis, given by a mere aesthetic feeling, is *unconsciously* presupposed, while on the analytical path, with an expanded scientific view, one proceeds from the earthly body as the only salient whole, and only then are all distinctions to be justified by analytical search for the same and different. It is through this highlighting of the same and different that one arrives at those *continuous systems of organs* of the earth organism. [...] Along this synthetic path, however, this connection can only ever become *perceptible in a painting*, but never an *insight in a science*. If we want this insight, we must first have studied all the *conditions* of locality in the development of nature individually before we dare to attempt a total conception of it. (Fröbel, 1831: 504-505, translation MH)

Turning back to his analogy with anatomy, Fröbel (1831: 505) argues that to proceed scientifically and analytically in geography, and not according to arbitrary principles, we must not start with vague individual units of analysis vertically (or regionally), but study the various geographic phenomena across the earth's surface horizontally (or systematically). We must, for instance, study the systems of hydrology and climatology in much the same way the anatomist studies the nervous or muscular systems in their totality, as opposed to the nervous and muscles of the arm or leg.

Elevating systematic or general geography over regional geography is another response to the vagueness of areal units. As Plato explains, intellectual inquiry must be careful to "cut up

each kind according to its species along its natural joints and to try not to splinter any part, as a bad butcher might do.” (Plato, *Phaedrus*, 265e) The issue Fröbel highlights via the analogy with anatomy is that there are no clear natural joints along which one could dissect ‘earth-individuals’ or areas, regions, and landscapes out of the earth’s surface. Fröbel argues for a more conspicuous point of incision: not vertically through the earth’s surface, but horizontally along it; dissecting not areal units, but the various elements of geography, such as hydrology or climatology. Instead of explaining how geographer’s work with vagueness, Fröbel simply brackets geography’s vague concepts as non-scientific or aesthetic.

3.3.2.3 Areal realism: a question outside science?

The debate between Ritter and Fröbel leaves us with the principle question where the question of areal realism should be decided: inside science/geography, or outside (in philosophy or theology). By Ritter’s own admission, it requires *faith* to follow his work charitably. It is along these lines that Hartshorne (1939a: 235) adjudicates Fröbel’s critique of Ritter: it was “not an argument but simply a different philosophical assumption of science asserted without foundation”. Hartshorne (1939a: 236) goes on to defend Ritter’s approach: “In general–, we may say that the teleology in Ritter’s geography was an attempt to *interpret philosophically that which science could not explain.*”

But Hartshorne’s defence of Ritter fails to take Ritter by his own word. It was Ritter’s explicit goal to turn geography into a “branch of philosophy itself” (Ritter, 1862: 14, translation MH), explaining not only the physical composition, but also “the higher purpose of earth” (Ritter, 1862: 13, translation MH). In his reply to his most vocal critic, Ritter goes so far as to argue that “geography is not pure natural science to me” (Ritter, 1831: 517-518, translation MH).

Ritter, Fröbel, and Hartshorne share a dichotomous understanding of science on the one side and philosophy, theology and aesthetics on the other. They do not acknowledge the possibility that philosophical assumptions can be asserted *with* foundation; that an explanation of how we know the world requires more than what empirical or natural science can offer, but does not necessitate a turn to the spiritual.

3.3.3 Alexander von Humboldt: the emergence of landscape

The above discussion of Ritter and Fröbel leaves us with two options concerning areal realism:

Areal units beyond the earth itself can be guaranteed by divine plan (Ritter) or abandoned (Fröbel). In Humboldt's work, I identify a third, proto-phenomenological approach.

3.3.3.1 *Introducing Cosmos*

Reflecting on an anxiety that beset him as he planned his seminal work *Cosmos*, Humboldt ([1845] 1845: 1) identifies a “twofold cause”, which echoes the concerns of previous geographers: “The subject before me”, writes Humboldt,

is so inexhaustible and so varied, that I fear either to fall into the superficiality of the encyclopædist, or to weary the mind of my reader by aphorisms consisting of mere generalities clothed in dry and dogmatical forms. (Humboldt, [1845] 1845: 1)

This anxiety is not simply the product of “difficulties in the choice of the form under which such a work must be presented” (Humboldt, [1845] 1845: xi), i.e. the product of a problem of literary composition. Rather, the problem of how to write about geography mirrors a more principal difficulty, namely how we comprehend nature. Are we—reflecting on experiences of nature—not also confronted with an inexhaustible amount of impressions, which we have difficulty generalising?

Notably, according to Humboldt, we face no such difficulty. Reflecting on his own experiences, Humboldt explains that

Travels, undertaken in districts such as [the Alpine tropical landscapes of South America, and the dreary wastes of the steppes in Northern Asia], could not fail to encourage the *natural tendency of my mind towards a generalisation of views*, and to encourage me to attempt, in a special work, to treat of the knowledge which we at present possess, regarding the sidereal and terrestrial phenomena of the Cosmos in their empirical relations. The hitherto *undefined idea of a physical geography* has thus, by an extended and perhaps too boldly imagined a plan, been comprehended, under the idea of a physical description of the universe [...]. (Humboldt, [1845] 1845: x, emphasis MH)

The unity of geographic phenomena in “nature as one great whole”, the very possibility of a “unified idea of a physical geography”, is grounded in our cognitive capacity for generalisation. To what extent this unity, grounded in human cognitive capacity, is ‘mind-dependent’ or *a unity latent in nature itself* is the central concern of my discussion of Humboldt.

3.3.3.2 Unity in mind and/or nature?

Our cognitive capacity to generalise in such a way that we arrive at a concept of nature as unity is underwritten, Humboldt continues, by an emotional capacity: enjoyment. Independent of historical period or degree of education, Humboldt ([1845] 1845: 2) argues that humans experience an enjoyment which follows “from an intuitive feeling of [...] order”. This first and earliest degree of enjoyment is experienced as the “mind is penetrated [everywhere] by the same sense of the grandeur and vast expanse of nature, revealing to the soul, by a *mysterious inspiration*, the existence of laws that regulate the forces of the universe.” (Humboldt, [1845] 1845: 3, emphasis MH)

Revelation here takes place not through insight into a divine plan, but through the confluence of nature, cognition, and emotion in the experience of “mysterious inspiration”. This simplest form of enjoyment provides the principle of unity (and motivation) which later scientific endeavours follow.

Apart from enjoyment from contemplating and experiencing the unity of nature as an undifferentiated whole, Humboldt outlines a further degree of enjoyment with a narrower focus and object: enjoyment from the “contemplation of the individual characteristics of the landscape, and of the conformation of the land in any definite region of the earth” (Humboldt, [1845] 1845: 3-4), enjoyment from “the peculiar physiognomy [...] of the land” (Humboldt, [1845] 1845: 4-6, emphasis MH). In experiencing landscape, one experiences unity *in difference*; the different factors that constitute a landscape coming together in interrelation and cohesion, in a physiognomy of the land.

Although Humboldt ([1845] 1845: 4) does not go so far as to argue that “distant travels” are strictly necessary to experience the enjoyment of landscape, it is clear that encountering a foreign landscape-physiognomy leads to an intensified experience of unity. Encountering “a physiognomy wholly unknown to us”, we “receive new impressions, linked together by a certain secret analogy.” (Humboldt, [1845] 1845: 5)

It may seem a rash attempt to endeavour to separate [or dissect, MH], into its different elements, the *magic power exercised upon our minds by the physical world*, since the character of the landscape, and of every imposing scene in nature, depends so materially upon the *mutual relation of the ideas and sentiments* simultaneously excited in the mind of the observer. (Humboldt, [1845] 1845: 5, emphasis MH)

The language of secrecy, mystery, and magic Humboldt applies to the question what the unity of landscape (and nature) consists in highlights the difficulty of giving an analytical account of

this unity. “Humboldt’s optimism” (Böhme, 2018: 176, translation MH) lies in his philosophical, proto-phenomenological conviction that the unity of landscape and nature emerge from a confluence of nature and mind. It is but a “happy illusion”, Humboldt ([1845] 1845: 5) emphasises, to think that the unity of nature emerges from within us.

With this, in my words, phenomenological approach, Humboldt ([1845] 1845: 58-60) positions himself between two approaches to understanding nature of his time: rationalism and empiricism, to use Humboldt’s terms (see also Livingstone, 1993: 135; on the influence of Hegel on Humboldt, see also Bowen, 2009: 243). In their most extreme forms, Humboldt ([1845] 1845: 59) argues that these approaches place, respectively, too great an emphasis on subjectivity or objectivity, leading to contradictions between the “philosophy of nature” and “the path of experiment”.

If there be any contradiction, the fault must be either in the unsoundness of speculation [rationalism, MH], or in the exaggerated pretensions of empiricism, which thinks that more is proved by experiment than is actually derivable from it. (Humboldt, [1845] 1845: 59)

Humboldt’s approach—to inform and educate the phenomenological unity of nature and landscape with empirical measurements, a “thoughtful empiricism” (Bowen, 2009: 259)—seeks to balance these two extremes. The way in which language contrasts the “intellectual world” from nature must, in Humboldt’s ([1845] 1845: 59) view, “not lead us to separate the sphere of nature from that of mind, since such a separation would reduce the physical science of the world to a mere aggregation of empirical specialities.” In a reversal of Hartshorne’s argument, we would here be misled by language to believe that mind and world are distinct realms.

Returning back to an earlier argument, physical science without a philosophy (or phenomenology) of nature would be unable to identify the unity of nature and the physiognomy of landscape. These *facts*, Humboldt would say, are revealed to us through perceptions, intuitions, and feelings of unity.

Humboldt ([1845] 1845: 59) goes on to make an argument that is central to phenomenological theory more broadly, namely that

the external world has no real existence for us beyond the image reflected within ourselves through the medium of the senses. As intelligence and forms of speech, thought and its verbal symbols, are united by secret and indissoluble links, so does the external world blend almost unconsciously to ourselves with our ideas and feelings. (Humboldt, [1845] 1845: 59, emphasis MH)

Humboldt here appears to extend the unity of concepts, such as ‘nature’ or ‘landscape’, to include not only the unity of thoughts and words, but unity with the external world itself. In experiencing and articulating a landscape, we then give expression to a unity that is latent in both thought and nature itself. Our concepts, such as landscape, are consequently not ‘in our heads’, but part of the (external) world itself.

3.3.3.3 *Landscape painting as method*

The next chapter of *Cosmos*, titled “Delineation of nature. General review of natural phenomena” (Humboldt, [1845] 1845: 62), goes into further detail concerning the methodology of Humboldt’s approach. The problem of delineation is a key issue for areal realism: how do we “draw lines around ‘regions’” (Hart, 1982: 21-22)?

In a manner of speaking, the English translation of this chapter is an apt mistranslation: Humboldt’s original wording in German employs much more pictorial language: “Naturgemälde. Allgemeine Uebersicht der Erscheinungen” (Humboldt, 1845: 79) might be better translated as “Nature-paintings. A general overview of phenomena”. The translation of “nature-paintings” with “delineation of nature” is apt in the sense that it highlights the reason why Humboldt turned to landscape painting as a model for his approach: it allowed him to delineate nature in a phenomenological way (on the (historical) relationship between landscape painting and Humboldt’s approach, see also Kwa, 2005).

In drawing on landscape painting, Humboldt carves out an approach to areal realism that responds to both Ritter’s and Fröbel’s critique. Agreeing with Ritter, Humboldt too identifies areal units, but does not justify them through the invocation of a ‘world of God’ (see also Bowen, 2009: 239). Instead, Humboldt questions Fröbel’s distinction between science and aesthetics (on the question of the realism of art and aesthetics in regional geography, see also Leighly, 1937; Finch, 1939): the physiognomic and characteristic are not, in Humboldt’s usage of these terms, artistic flights of fancy, nor are they subjectivistic projections of the human mind onto nature. They are not, contra Fröbel, immune to analysis. Where Fröbel argued that areal units “can only ever become perceptible in a painting, but never an insight in a science” (Fröbel, 1831: 504-505, translation MH), Humboldt argues the opposite: the physiognomy and character of a landscape, which landscape paintings foreground, are not only open to analysis, they form the very basis for the scientific comprehension of unity in nature. Böhme (2018: 176, translation MH) hence calls Humboldt’s approach an “objective aesthetics”: “Physiognomy is another word for the aesthetics of nature.” (Böhme, 2018: 176, translation MH)

The difficulty of composing a nature-painting, either in literary or pictorial form, faces the same difficulty geography faces in regional description more broadly. Humboldt warns that

the descriptive picture of nature which we purpose drawing, must not enter too fully into detail, since a minute enumeration of all vital forms, natural objects and processes is not requisite to the completeness of the undertaking. The delineator of nature [ordnende Denker] must resist the tendency towards endless division, in order to avoid the dangers presented by the very abundance of our empirical knowledge. (Humboldt, [1845] 1845: 63)

Unity, as Ritter and Fröbel might agree, is not to be found in a comprehensive description of nature. However, for Humboldt, this does not render unity theological or impossible and incomprehensible. Instead Humboldt ([1845] 1845: 63) argues phenomenologically that the very “shade of sadness” which marks our inability to directly and comprehensibly account for the unity we search for, the “unsatisfied longing for something beyond the present” is a *positive* experience.

Such a sense of longing binds still faster the links which in accordance with the supreme laws of our being connect the material with the ideal world, and animates the mysterious relation existing between that which the mind receives from without, and that which it reflects from its own depths to the external world. (Humboldt, [1845] 1845: 63)

Landscape painting serves as a model for Humboldt because it captures this immaterial tension between mind and nature in a material form on canvas. Landscape paintings produce their effect by holding in tension the abundance of nature and the unity of landscape, capturing the physiognomy or character of an areal unit. Landscape paintings, as Humboldt ([1847] 1847: 440) explains in the second volume of *Cosmos*, “combine the visible and invisible in our contemplation of nature.” They require for their “development a large number of various and direct impressions which, when received from external contemplation, must be fertilized by the powers of the mind, in order to be given back to the senses of others as a free work of art.” (Humboldt, [1847] 1847: 453)

It is for this reason that Humboldt ([1847] 1847: 452) recommends artists join expeditions to little studied regions of the world. As Humboldt ([1850] 1806) explains in his previous work on the *Ideas for a Physiognomy of Plants*, from which this section of the *Cosmos* heavily draws, those who “are capable of surveying nature with a comprehensive glance and abstract their attention from local phenomena,” such as landscape painters, “cannot fail to observe” that

every zone

has its own distinctive character. The primeval force of organization [...] binds all animal and vegetable structures to fixed ever-recurring types. For as in some individual organic beings we recognise a definite physiognomy, and as descriptive botany and zoology are, strictly speaking, analyses of animal and vegetable forms, so also there is a certain *natural physiognomy peculiar to every region of the earth*. (Humboldt, [1850] 1806: 217, emphasis MH)

What allows the geographer to delineate an areal unit is, according to Humboldt, its distinct physiognomy; something which does not result from the comprehensive collection of facts, but from a phenomenological attitude which sees through the individual aspects of an area to apprehend its latent character or form. In *Cosmos*, Humboldt states more clearly that this physiognomy is the

total impression produced by the aspect of any particular region. To apprehend these characteristics, and to reproduce them visibly, is the province of landscape painting; [...] it is permitted to the artist [...] to resolve beneath his touch the great enchantment of nature [...]. (Humboldt, [1847] 1847: 456)

What the artist resolves in their work is precisely the tension between individual objects of description and conceptual unity in thought. Humboldt's ([1850] 1806: 219-220) particular interest in plants arises from the fact that it is "the vegetable covering of the earth's surface which chiefly conduces to the effect" of the physiognomy of an area. The 'objective', physical constitution of a landscape and the 'subjective', perceptual abilities of humans meet on the scale of vegetal life; 'inner' and 'outer' perception, to extend Ritter's (1822: 23) turn of phrase, meet 'eye to eye':

Vegetable forms [...] act on the imagination by their enduring magnitude [...]. [...] In determining those forms, on whose individual beauty, distribution, and grouping, the physiognomy of a country's vegetation depends, we must not ground our opinion (as from other causes is necessarily the case in botanical systems) on the smaller organs of propagation, that is, the blossoms and fruit; but must be guided solely by those elements of magnitude and mass from which the total impression of a district receives its character of individuality. (Humboldt, [1850] 1806: 219-221)

The painter, again, is particularly attentive to what produces the "total impression", as they

distinguish between pines or palms and beeches in the background of a landscape, but not between forests of beech and other thickly foliated trees.” (Humboldt, [1850] 1806: 221)

3.3.4 Alfred Hettner: areal realism as mysticism

By way of concluding my account of the geographic developments around the question of areal realism which led up to Sauer’s *Morphology*, I now turn to Hettner’s work, which, through Hartshorne’s (1939a; 1939b) rendering, would prove to be influential for geography’s understanding of regions up until today (on Hartshorne’s incomplete understanding of Hettner, see Harvey and Wardenga, 2006).

Starting with a shared concern, both Humboldt and Hettner sought to unify horizontal and vertical, systematic and regional approaches to understanding nature. Where Humboldt argued for areal realism, for the unity of nature on various scales, the physiognomic and characteristic expression of which we can experience, Hettner was decidedly sceptical. To assume that areal units are “independently given”, Hettner argued, would be nothing short of “mysticism” (Hettner, 1934: 143, translation MH). Instead, “they only result from the being-together and acting-together of different factors, they are secondary.” (Hettner, 1934: 143, translation MH)

Some greater piece of the earth’s surface is then only unitary in *one* respect, in others multiple, and, in the strictest sense, only the individual point-on-earth [Erdstelle] has complete uniqueness and individuality. There is and there can be no universally valid [...] classification of the earth. (Hettner, 1934: 143-144, translation MH)

Contra Fröbel (1831), however, Hettner was acutely aware of the danger a critique of areal units puts geography in: If areal units do not exist, why not delegate the study of earth to the individual sciences which study the (primary) factors that constitute (secondary) areal units? Hettner’s geographical project sought to save geography from running the risk of “losing itself in boundlessness” (Hettner, 1905: 545, translation MH), which accompanies a critique of areal realism.

Turning towards the history of geography in a way Mayhew (2011) might predict, Hettner argues that geography is defined “as the study of areas [Erdräume]” (Hettner, 1905: 549) or the “study of regions [Länderkunde]” (Hettner, 1905: 553). This preliminary definition allows Hettner to situate geography in relation to the other sciences, securing its logical consistency. Following Comte, Hettner (1905: 550) situates geography among the *concrete sciences*, which are complemented by the *abstract sciences* (including physics, chemistry, and psychology).

The concrete sciences are themselves divided into the *systematic* (mineralogy, botany, zoology, palaeontology, linguistics, theology, politics, and economics), the *historical* (earth history, prehistory, and cultural history), and the *chorological* sciences (astronomy and geography) (Hettner, 1905: 550-552). These three types of concrete sciences facilitate a threefold perspective, studying reality concerning “relations of factual interrelatedness” (systematic), “temporal development” (historical), and “spatial distribution” (chorological) (Hettner, 1905: 551, translation MH). Hettner identifies such a chorological understanding of geography in the work of previous geographers, such as Ritter (1862), Richthofen (1883), and Marthe (1877; 1879).

Through situating geography in the overall logic of scientific inquiry, Hettner (1905: 553) is able to unify geography as a discipline, even as geography studies innumerable types of objects (this would only be of concern if geography were a systematic concrete science). Instead, geography is unified in virtue of its chorological perspective: studying the earth’s surface concerning “areal differentiations and relations [räumliche Verschiedenheiten und Beziehungen]” (Hettner, 1905: 557). Hettner emphasises that geography’s chorological approach is not a *method*, given that various methods are necessary in order to study areal differentiations and relations. “The journey is not chorological, the destination is.” (Hettner, 1905: 557, translation MH)

This explains part of Hettner’s scepticism towards geographers of landscape, such as Passarge (1921), who seek to find a single object that defines geography (Hettner, 1905: 555). By focussing on the unity of *perspective*, grounded in an overarching logic of science, Hettner avoids the difficulties of justifying why a certain *object* or *method* should be of import to geographers, and what they would ultimately consist in. In a sense, a chorological approach is *agnostic* when it comes to its objects and methods, skirting the issue of boundlessness.

Delimiting areal units is, for Hettner (1905: 557), not a practice of identifying ‘real’ regions and landscapes, as Humboldt sought to do, but rather both an artefact of the history of geography and of the practice of chorological study. Given that it is impossible to study the interrelation of all geographic factors (relief, precipitation, temperature, vegetation, etc.) globally at once, geography must combine a horizontal and vertical, a systematic and regional approach to narrow down its research on a manageable scale.

Dissecting an areal unit out of the earth as a whole is analogous to figuratively cutting through a layer of maps, each layer detailing the areal distribution of one of geography’s objects. The problem this approach poses, and which Fröbel already highlighted, is: Where does one make the areal incision? And what is left when one does?

For Hettner, all the products of such incisions are *secondary*. It would never be the case, Hettner would argue, that, if you overlay different maps showing different geographical factors, overlapping regions would emerge, showing logical points of incision. At best, a small number of factors constitute a region, which dissolves as soon as other factors are chosen as the basis for incision or geographical delineation. Every “space on earth” [*Erdräum*], Hettner (1934: 144, translation MH) argues, “can be divided differently, depending on which aspect one foregrounds.” For this reason, Humboldt’s approach has been criticised for producing only “fragmentary chorographies” (Hözel, 1896: 382, translation MH), based on whichever geographic factor (mainly vegetation) elicits the experience of physiognomy, of a total impression of unity.

3.3.4.1 Siegfried Passarge: the impossibility of defining landscape

To appreciate why Hettner is so careful to not base geography on a single object of inquiry, such as landscape, it is helpful to turn to a vocal opponent of Hettner, Passarge.

Passarge (1921: 4) differentiates between *distribution areas* [*Verbreitungsgebieten*] and *earth areas* [*Erdräumen*]. The first type of area describes an agglomeration of a certain phenomenon horizontally across space, whereas the second type denotes “very specific closed, uniform areas” (Passarge, 1921: 4, translation MH) vertically. It is the second type of area, forming a distinct areal unit, that is the central object of Passarge’s *comparative landscape studies* [*Vergleichende Landschaftskunde*].

How are such areal units to be identified? The difficulty with answering this question with respect to Passarge’s (1921) theory is that his areal units are multiple. Although Passarge’s landscape studies are mainly concerned with “*landscape areas* [*Landschaftsräume*]”, it is apparent, according to Passarge, that any “landscape picture” consists of smaller areas—“landscape parts” (Passarge, 1921: 6, translation MH)—which overlay and permeate each other. It is the repetition of these smaller areal units in distinct patterns that allow us to recognise a landscape; they are the “*building blocks* of landscape” (Passarge, 1921: 7, translation MH).

This approach in turn raises the question how many building blocks are required to form a landscape. Passarge is aware of this problem, stating that “it is impossible to determine a definite size that would be required for the definition of a landscape. The discretion of the individual is given leeway, and it is also desirable that no fetters constrict.” (Passarge, 1921: 9, translation MH) Later, Passarge writes that there “is generally no specific relationship of scale between landscape parts and landscape areas.” (Passarge, 1921: 17, translation MH)

Entrusting the individual researcher with applying the ambiguous concept of landscape in a responsible manner, Passarge goes on to offer various concepts under which one might, figuratively speaking, sort the scraps that remain after having dissected some spatial expanse into landscapes. These include “part-landscapes” (Passarge, 1921: 9, translation MH), “landscape regions” (Passarge, 1921: 10, translation MH), “landscape belts”, “landscape blocks” (Passarge, 1921: 11, translation MH), and, finally, “residual forms” (Passarge, 1921: 12, translation MH).

The question the introduction of these various concepts raises is if they simply potentiate the ambiguity of Passarge’s landscape concept: Instead of having to just name criteria for something to count as a landscape, Passarge must now provide criteria to differentiate these other areal units from landscape proper; each attempt at differentiation becoming a new site of ambiguity.

This problem repeats itself concerning the borders of landscapes. Passarge introduces the concept of “border-space” (as opposed to “borderline”) to allow for the fact that borders can be “independent transitional spaces” (Passarge, 1921: 14, translation MH), which are themselves landscapes. As Passarge admits,

although the various areas [landscape parts] form a landscape unity, the borders of the individual areas very often do not coincide. Hence, it is impossible to carry out a sharp delineation of landscape parts, landscapes, etc. In these cases, one could choose the *most sharply delineated area*. (Passarge, 1921: 14, translation MH)

‘Sharpness of delineation’ then becomes another site of ambiguity. Sharply delineated in which respect and in relation to which geographic features? Arguably, Passarge here falls into the trap Hettner warns of when trying to dissect areal units according to some fixed taxonomy. No universal set of criteria can be found which would guide such areal dissection. Instead of facing the problem of vagueness, I argue, Passarge introduces a variety of landscape-concepts which give the illusion of exactness through ambiguity in the way Hartshorne criticises.

3.3.4.2 *Squaring the areal circle*

In his account of the “problems of general geography”, Schmitthenner (1951: 123, translation MH), himself a PhD student of Hettner, addresses the question how a scientific, chorological approach relates to our *everyday experience* of areal units, such as landscape.

Although landscapes are intuitively understood by “the public” and given “a local name”,

the scientific analysis of landscapes reveals what layman's knowledge covers over: they are not simply experienced but "experienced in thought" [denkend erfahren] (Schmitthenner, 1951: 126, translation MH). Their essence, the reality of areal units, is not seen but "posited" (Schmitthenner, 1951: 126, translation MH). Schmitthenner distinguishes two types of reality to make sense of this illusory experience: posited landscapes are not "fully real", they are "abstractly real" (Schmitthenner, 1951: 127, translation MH).

Employing an alternate allegory to the one of incision, Schmitthenner (1951: 128, translation MH) illustrates the process of positing a landscape as a process of 'sieving' what is of "geographical import" out of the infinitude of earth's phenomena.

However, Schmitthenner (1951: 129) is careful to emphasise that the selection of the 'sieve', of the dominant criteria one selects to filter out the essence of a geographic area, is largely arbitrary (Schmitthenner, 1951: 129). To attempt to find universal criteria to differentiate the earth's surface into areal units would be akin to attempting to "square the circle" (Schmitthenner, 1951: 130, translation MH).

Regions are not "metaphysical wholes", they are nothing "truly given", "their unity emerges from a judgement and in our minds." (Schmitthenner, 1951: 131, translation MH) With great philosophical awareness, Schmitthenner (1951: 132, translation MH) calls the approach he outlines, based on Hettner's work, "transcendentally-teleological" as opposed to "transcendent". In agreement with Ritter, whose 'earth-individuals' are examples of transcendent areal units par excellence, Schmitthenner (1951: 132, translation MH) argues that to assume metaphysical, transcendent, 'fully' real areal units requires "a principle of construction that lies outside of science."

In other words, geographical research is aware that what (transcendentally) makes its own research possible, areal units, are posited as entities which regional geographers (teleologically) strive towards. They have, however, no (transcendent) reality outside the act of chorological study: they are 'abstract realities', guiding principles for geographic research (on idealities guiding scientific research, see also Section 5.3.3). Areal units are suspended in conceptual space, touching reality only through the mind of the geographer.

3.4 The ‘road not taken’

Contrasting Hettner’s and Schmitthenner’s approach with Humboldt’s brings into focus the key onto-epistemological problem a phenomenological approach to areal realism answers to: For Hettner and Schmitthenner, experiences of unity concerning area, region, and landscape must be illusory. Taking for granted that primary reality is composed of the various geographical factors, areal units cannot be real in the same way, they must be secondary because no criteria can be found according to which areal units could be universally delimited. There is no universal logic of incision, no universal sieve with the help of which areal units can be identified. It is only because we are unaware of the act of positing, which constitutes areal units according to differing criteria, that we mistake regions and landscapes to be real. We mistake what is real ‘for us’ with the ‘fully real’.

However, Hettner’s and Schmitthenner’s approach relies on an act of positing too: namely that primary reality should consist in the individual factors systematic or general geography studies. That we should take these to be more real than, for instance, the unity of landscapes we experience is the result of an ontology guided by the epistemology of natural science, privileging the measurable over the experientable (I discuss this problem at length in Section 5.3.3). It is, repurposing Hartshorne’s (1939a: 235) argument, “not an argument but simply a different philosophical assumption of science asserted without foundation”.

Phenomenological theory more broadly critiques the notion that objects of science are more real than the objects of experience/of the life-world. Phenomenological approaches to science, such as Husserl’s ([1936] 1936) or Ihde’s (1990), seek to close or at least explain the gap between what is evident in everyday experience and what is scientifically investigated.

Schmitthenner (1951: 132, translation MH) is right to argue that “a principle of construction”, which would underlie ‘fully real’ areal units, “lies outside of science.” At least outside natural science. But from this, it does not follow, as Hartshorne later argues, that areal units are beyond *reason*. As Humboldt’s proto-phenomenological approach to landscape shows, it is possible to offer phenomenological evidence for the experiential unity of landscapes; an experience which is often the starting-point for scientific inquiry, as even Hartshorne (1939a; 1939b) acknowledges through-out his methodological reflections, emphasising the importance of recognising the *character* of a region.

A phenomenologically informed geographical approach is more parsimonious than the accounts Hettner and Schmitthenner offer: instead of assuming a categorical distinction between areal concepts ‘for us’ and the ‘fully real’ primary geographic factors we are

describing, which then necessitates the view that experiences of areal unity are illusory, a phenomenological approach takes areal units to be real and allows the research of these units to be informed, as Humboldt's for instance is, by scientific measurement.

The advantage of a phenomenological approach becomes increasingly obvious in light of more recent research in the philosophy of geography, which has shown that almost all objects of geographic inquiry, including mountains, forests, and lakes, are subject to the same sort of struggle between 'full' and 'abstract' reality as larger areal units, such as landscapes or regions (Smith and Mark, 2003). Although mountains and lakes certainly are *more* conspicuous objects of perception than areas, regions or landscapes, they are no less products of "everyday language" (Hettner, 1934: 144, translation MH), of "our everyday commerce with the world", (Varzi, 2001b: 53) as opposed to precisely delineated, 'primary' objects (Hettner, 1934: 143). Questioning the distinction between 'abstract' and 'full' reality, a phenomenological approach offers an account of areal units as phenomenologically real.

3.4.1 Goethe's phenomenology of concepts

Ultimately, the path Sauer takes in his *Morphology* leads to a phenomenologically realist account of landscapes. In order to follow Sauer down this path, and finally sketch the 'road not taken', the origin of Sauer's morphological method in Goethean science must be explicated (on Goethean science, see also Seamon and Zajonc, 2005; Meyer-Abich, 1970; Steuer, 2002; Wenzel, 1997).

Although Goethe's work predates the inception of phenomenology as a philosophical discipline, he sought to develop an approach to understanding the natural world founded on experience. "Goethe's method of the observation of nature is", as Figal highlights, "literally phenomenological: it is study of appearances." (Figal, 2014: 239, translation MH)

As Böhme (1999: 98, 101) explains in his account of "landscape physiognomics", Humboldt's and Goethe's approach to physiognomy did not seek to reveal some secret, underlying essence beyond the phenomena we experience. "The specific is", instead, "a presentation of the abstract, its symbolic expression" (Hühn, 2020: 144, translation MH). "Goethe saw no inherent conflict between experience and idea or between fact and conception." (Seamon, 2005: 4)

This is the onto-epistemological basis for Goethe's maxim, to which Sauer will return, that "[o]ne needn't seek anything beyond the phenomena; they themselves are the theory" (Goethe, [1833] 1953: 432, translation MH). In their physiognomical work, Goethe and Humboldt hence

sought to analytically reconstruct how ‘total impressions of nature’ constitute themselves. Physiognomical description is not concerned with the description of minute details, but, much like phenomenology itself, with the “general” and “typical” (Böhme, 1999: 100, translation MH), with the *eidetic*, salvaging concepts from experience.

To understand what is at stake in morphology, one must clarify the nature of concepts thus salvaged. Evidently, as Humboldt’s approach exemplified, they do not simply appear to emerge from the mind. In his comprehensive discussion of Goethe’s term ‘concept’ (*Begriff*), Muenzer (2021) distinguishes the practice of conceptualising from defining (I discuss the act of concept-creation in detail in Chapter 4).

That is to say, driven by the affect of amazement (*Erstaunen*), the searching mind invents concepts. And even if no single word or phrase will ever adequately capture (*erfassen*) and comprehensively contain the essence of things in traditional definitions, there is a special moment (*Aperçu*) of intuitive understanding (*Anschauung*) for Goethe that, according to his phenomenology of the concept, facilitates philosophical seeing by collecting and organizing all the conceptual attempts, or *Versuche* (*experiments*), to understand things in terms of their emergence (*Erscheinung*) through time. (Muenzer, 2021: 25)

Concept is a “*paradoxical* figure of thought” because it “finds itself lured to define its own borders” whilst these borders themselves open onto “transitional zones of reconceptualization” (Muenzer, 2021: 25).

As a figure of thought, ‘concept’ mirrors the problem ‘area’, ‘region’, and ‘landscape’ face in geographic description (for a phenomenological account of conceptual space, see also Figal, 2016: Chapter 5). A concept, for Goethe, does not define a distinct, concrete or exact object. Instead, concept contains “an *infinite* number of past and further modifications, or finite concrescences, of its own cognitive power.” (Muenzer, 2021: 25) To understand something conceptually means to not limit it “to any of its individual modifications or material expressions”, to acknowledge “that the ontological pursuit of things in their essence cannot be limited by the requirement of concepts within separate disciplines [...] for clarity and stability.” (Muenzer, 2021: 25)

In contrast to what is asked of scientific concepts by Fröbel (1831) and Hartshorne (1939a), Goethe’s concept undermines

the reliance of orthodox philosophical systems on logical and stable properties like the “particular” or the “universal,” which must be attributable to and predicable of things, if

they are to become legitimate objects of ontological and epistemological reflection. By contrast, *Begriff* [*concept*] privileges force fields of philosophical activity and discovery with fluid and permeable borders that [...] work intuitively within the living world. (Muenzer, 2021: 25)

Concepts as “force fields of philosophical activity and discovery” are akin to the aforementioned tension which characterises areal units in Humboldt’s work. They are not strictly delimitable objects, but instead fluid and permeable: they can be concretised in an infinite number of possible ways. If landscape, for instance, is understood as a Goethean concept, it cannot be defined in analytical terms with universal rules of areal incision, because, as a concept, it itself “exists in a state of perpetual becoming.” (Muenzer, 2021: 25)

Goethe’s concept is closely related to *form*, the object of morphology in the Humboldtian, Goethian, and Sauerian sense, as form itself is a

a lawful process of formation actualized in an interplay of invariance and variation. Form thusly conceived is a genesis from within, a self-shaping governed by an inner principle. (Wellbery, 2021: 46)

In agreement with Humboldt’s phenomenologically realist understanding of landscape as a concept between mind and nature, Goethe’s concept “as a thought object of experience” is not a product of the mind, but “resides in the phenomenal world and is animated from within by its own elusive governing rule.” (Muenzer, 2021: 27, see also 37) Clarifying a concept, such as landscape, then, is not only about understanding what we *mean* by landscape, but about what landscape *is*. The conceptual realm is not of the mind, but of the world geographers seek to describe.

Even though concepts are fluid and open to revision, this does not mean, as Fröbel (1831) might argue, that they are immune to analysis. Quite the opposite: As Humboldt shows, the ‘elusive governing rule’, the form of landscapes is the very starting point for scientific inquiry. To uncover the “rule that regulates the flow of [a concepts] fugitive appearances” (Muenzer, 2021: 27) is, consequently, the task of a morphological, physiognomic, phenomenological science.

Crucially, for Goethe, this conceptual work does not belong outside of science, for instance in the realm of faith (Ritter, 1862; on Ritter and Goethe, see also Schmitthenner, 1937).¹³

¹³ Muenzer (2021: 34) argues that concept “serves as the creative divinity of [Goethe’s] heterodox philosophical work.”

Instead, Goethe envisions a science that “perpetually *tests* and *tries* to express the ineffable rule of its own conceptualisation [of forms, MH], understood as a process of progressive emergence and increasing self-awareness.” (Muenzer, 2021: 33) Hence to critique geographers of landscape, such as Sauer, for being unable to provide an exact definition of their object, as Hartshorne (1939a: 331) does, misses the point of a phenomenological or morphological approach to geography: its objects are not clearly delineated things, but forms given in tensions, in conceptual ‘force fields’ between mind and world which can, at best, be articulated in degrees of clarity. They are, in other words, vague.

Muenzer (2021: 28) description of conceptual work mirrors the geographical work of capturing landscapes.

Rhythmically alternating on its journey of self-perfection between systolic moments of clear focus that hold onto objects by delimiting them in thought and an unbounded exploration of the diastolic process that generates them in the first place, Begriff [*concept*] finds its ontological place in a force field of pure liminality between things that are observable and are not. (Muenzer, 2021: 28)

The practice of philosophical (conceptual) and geographical (areal) work meet in this struggle of delimitation. A phenomenological geography does not have a static view of ‘primary’ objects as the basis for understanding geographical reality: it also encompasses those phenomena (areal units) perpetually in process.

3.4.2 Sauerian phenomenology

Sauer was an early and vocal critique of the environmental determinism dominant in American geography at the turn of the century, some of which was influenced by Ritter’s earlier teleological thinking (Kersten, 1982; on the origins and further development of environmental determinism in American geography, see also Guyot, 1855; Davis, 1906; Semple, 1911; Huntington, 1915). Given this dominance, Sauer deemed it necessary to disassociate himself from what he deemed the “common and uncritical acceptance of the earlier definitions of geography solely in terms of environmental influences.” (James and Martin, 1981: 320) The final result of this disassociation is Sauer’s programmatic call for geography as *chorology*, which he sets out in the *Morphology*, penned shortly after his arrival in Berkeley as chairman of the Department of Geography, introducing himself (and his understanding of geography) to his colleagues.

This rejection of environmental determinism helps explain Sauer's sudden turn to phenomenology, after he had previously published an overview of his approach without the mention of it (Sauer, 1924; Kersten, 1982: 61). According to Sauer, 'environmentalist' geography rested on a faulty epistemological basis. To assume that environment determined culture was, in Sauer's eyes, "to accept a single dogma" (James and Martin, 1981: 320) which threatened to prejudice the geographer's work in the field. Sauer turned to phenomenology precisely for its critique of theory-ladenness, for its call to presuppositionless inquiry: to let things speak for themselves. Phenomenology gave Sauer the philosophical licence to disregard geographic approaches that relied heavily on theorisation as opposed to observation, such as environmental determinism or Davis' (1899) genetic classification of landforms. Phenomenology provided the theoretical foundation for his morphologic method, which "rests upon a deliberate restraint in the affirmation of knowledge." (Sauer, 1925: 31)

This motivation behind Sauer's turn to phenomenology explains, in part, why Sauer himself did not develop a substantive, phenomenological approach to geography. In Sauer's eyes, phenomenology is not so much a productive method for geographical research, but rather a critical tool with which to wipe geography clean of theory.

However, Sauer's line of argument equally emphasises how important phenomenology *should* have been for the chorological project he outlines the *Morphology*: If geographical inquiry is meant to be phenomenological in the sense that it begins without theoretical presuppositions, then the object of *chorology* (area, region or landscape) can itself not be a theoretical postulate, but must be—to use Sauer's phrasing—"naïvely given" (Sauer, 1925: 21). Areas, regions, and landscapes must, in other words, be investigated according to their phenomenological reality.

3.4.2.1 Sauer, a cultural geographer?

Students of Sauer's work might be surprised by the absence of a concept that is integral to the *Morphology*, Sauer's geography, and the Berkeley School, as they are taught in geography departments: *culture*. After all, "[c]lassical cultural geography is conventionally traced back to origins in the 1920s, with the work of Carl Sauer and his colleagues at the University of California, Berkeley" (Gibson and Waite, 2009: 413). As Williams (2009b: 16) notes

On arriving in Berkeley, however, he made a few unsuccessful forays into the geomorphology of southern California, and soon found natural soul mates in the anthropologists Alfred Kroeber and Robert Lowie. The concept of 'culture' subsequently

pervaded all his teaching and writing. In *Morphology of Landscape* he distilled an almost wholly German geographical literature, established the primacy of human agency in the formation of cultural landscapes “fashioned from a natural landscape by a culture group” and the importance of a time based approach. In addition, he placed great importance on observation and contemplation in the field – *Verstehen* – an empathetic understanding (phenomenology) and intuitive insight into behavior or object in order to achieve “a quality of reasoning at a higher plane” than the tangible facts alone.

Through the lens of cultural geography, Sauer is seen to have emancipated himself from “environmental determinist thinking” (Williams, 2009b: 16) through an emphasis on culture as a shaping force, as opposed to something shaped by nature. This reading of Sauer has in turn led to him being labelled as a ‘superorganicist’ and ‘cultural determinist’ (Gibson and Waitt, 2009: 413), turning culture into a “mode of explanation [...] which reifies the notion of culture assigning it ontological status and causative power.” (Duncan, 1980: 181)

Duncan (1980: 182) traces the “theory of culture as a super organic entity” back to the Berkeley anthropologists Kroeber and Lowie. This perspective, Duncan (1980: 182) goes on to argue, “was adopted by Carl Sauer as a result of his association with Kroeber and Lowie at Berkeley in the twenties and thirties and was subsequently passed on to his students” (Solot (1986: 511) has called this argument “overdrawn”).

As I argued in the introduction to this chapter in Section 3.1.1, there is, however, little evidence that Kroeber and Lowie influenced the *Morphology* (Kenzer, 1987). This ‘culturalist’ reading of Sauer’s work obscures that the object of Sauer’s ‘empathetic understanding’ is not only cultural/human geography, but physical geography too. In casting Sauer as the originator of cultural geography in this way, Sauer’s phenomenological response to the problem of areal realism is obscured. In Solot’s (1986: 509, emphasis MH) rendering, for instance, the “idea of landscape was critical to Sauer’s developing concept of geography *because it could easily accommodate his interest in culture.*”

3.4.2.2 The *Morphology*

The *Morphology* starts with a programmatic introduction. Sauer (1925: 19) asks the reader to “reëxamine the field of geography” in light of American and European geography drifting apart. Nothing less than the illumination “in some degree [of] both the nature of the objective and the problem of systematic method” is Sauer’s (1925: 19) aim, “keeping current views abroad especially in mind”.

The first section of the main body of the *Morphology* is titled: “*The phenomenological view of science*” and begins:

All science may be regarded as phenomenology, the term science being used in the sense of organized process of acquiring knowledge, rather than in the common restricted meaning of a unified body of physical law. (Sauer, 1925: 20)

A footnote, at the end of the very first sub-clause of the opening sentence, already points to the key issue in evaluating the phenomenological nature of Sauer’s work: Sauer cites, as the source of his concept of phenomenology, the writings of Keyserling (1910), who was himself not part of the phenomenological tradition proper, the foundational work of which—Husserl’s *Logical Investigations*—was published in 1900 and 1901, nor was he taken seriously as an academic in his time (Britannica, 2021).

According to Keyserling (1910: 4-5) we only have access to reality through experience, i.e. it is nonsensical to hypostatise ‘primary’ objects or reality independent of human subjectivity (Keyserling, 1910: 4-5). What is real, and what we can scientifically account for, are the various *phenomena* we experience. Hence Keyserling calls “general phenomenology” the “science of that which exists in general” (Keyserling, 1910: 7, translation MH). “Phenomenality”, Keyserling goes on to clarify, “is synonymous with empirical reality.” (Keyserling, 1910: 8, translation MH)

Taking his general approach into view, it would be wrong to say that Keyserling’s work is completely unrelated to the phenomenological project. As Keyserling correctly notes, one central problem the phenomenologist faces is “establishing matters of fact and their exhaustive conceptual clarification” (Keyserling, 1910: 7, translation MH), taking inspiration from and citing Goethe’s aforementioned maxim “one needn’t seek anything beyond the phenomena; they themselves are the theory” (1910: 3; Goethe, [1833] 1953: 432, translation MH).

What Sauer took a phenomenological approach to mean, in his interpretation of Keyserling’s work, is the interrogation of the very nature of the objects of geographic study on the basis of experience. To “illuminate in some degree both the nature of the objective and the problem of systematic method” (Sauer, 1925: 19) in geography, one must first (i) clarify “the phenomena that constitute the ‘section of reality’ which is occupied by geography”, in order to then (ii) develop “a method of determining their connection.” (Sauer, 1925: 20) The question of areal realism decides itself depending on how these questions are answered.

Sauer (1925: 20) opens his discussion of the first question concerning geography’s section of reality by outlining “three distinct fields of inquiry” which “are usually designated as

geography”: (i) the “study of the earth as the medium of physical processes”, (ii) the “study of life-forms as subject to their physical environment”, and (iii) “the study of the areal or habitat differentiation of the earth, or chorology.”

Where Kant ([1802] 1802) and Hettner (1905) sought to deduce the “primary subdivisions of knowledge” (Sauer, 1925: 21) which constitute the individual disciplines according to philosophical and methodological principles, Sauer instead pursues a phenomenological approach:

The experience of mankind, not the inquiry of the specialist, has made the primary subdivisions of knowledge. Botany is the study of plants, and geology that of rocks, because these categories of fact are evident to all intelligence that has concerned itself with the observation of nature. In the same sense, area or landscape is the field of geography, because it is a naïvely given, important section of reality, not a sophisticated thesis. (Sauer, 1925: 20-21)

Underlying this statement is the insight that the units we identify in nature are not things we posit, they are “categories of fact”. The concepts through which we divide reality are points of contact between mind and nature. Sauer’s (1925: 21) “popular definition” of geography as chorology, the study of areal units, rests on the “universality and persistence of the chorologic interest and the priority of claim which geography has to this field”. This is as much a phenomenological argument, as it is a historical one. Geographic knowledge is areal knowledge, and not knowledge of the whole of the earth, as Sauer (1925: 21-22) concludes in agreement with (and citing) Hettner (1923).

Although Sauer is right in citing Hettner as a proponent of chorology, it is also a surprising choice, given Hettner’s critique of areal realism discussed above. Adherents “of other, recent schools of geography”, Sauer (1925: 22) writes, would “deem this naïvely given body of facts inadequate to establish a science”; a position Hettner would arguably agree with.

Sauer seeks to appease critics of his approach by shifting his attention away from

the phenomenal *content* to the nature of the *connection* of the phenomena. We assert the place for a science that finds its entire field in the landscape on the basis of the significant reality of chorologic *relation*. The phenomena that make up an area are not simply assorted but are associated, or interdependent. To discover this areal “connection of the phenomena and their order” is a scientific task, according to our position the only one to which geography should devote its energies. The position falls only if *the non-reality of area* be shown. (Sauer, 1925: 22, emphasis MH)

What is the nature of this “significant reality of chorologic relation”? Hettner (and Schmitthenner) would reply: it is of ‘secondary’ nature ‘for us’. For Sauer, however, “the non-reality of area” is not yet shown. To the contrary, Sauer argues that

The task of geography is conceived as the establishment of a critical system which embraces the phenomenology of landscape, in order to grasp in all of its meaning and color the varied terrestrial scene. [...] The objects which exist together in the landscape exist in interrelation. We assert that they *constitute a reality as a whole* which is not expressed by a consideration of the constituent parts separately, that area has form, structure, and function, and hence position in a system, and that it is subject to development, change, and completion. Without this view of *areal reality and relation*, there exist only special disciplines, not geography as generally understood. (Sauer, 1925: 25, emphasis MH)

Not only the relations themselves, landscapes too are real. They are primary.

Following the phenomenological approach he outlined above, Sauer (1925: 25) goes on to define ‘landscape’—geography’s section of reality—as “the unit concept of geography, to characterise the peculiarly geographic association of facts.” Landscape is “an area made up of a *distinct association of forms*, both physical and cultural.” (Sauer, 1925: 26, emphasis MH) Citing Bluntschli (1921: 49), who in turn cites Humboldt as an inspiration for his work, Sauer (1925: 26) argues that “one has not fully understood the nature of an area until one ‘has learned to see it as an organic unit, to comprehend land and life in terms of each other.’”

Sauer introduces

this point prior to its elaboration because it is very different from the unit concept of physical process of the physiographer [...]. The mechanics of glacial erosion, the climatic correlation of energy, and the form content of an areal habitat are three different things. (Sauer, 1925: 26)

Following the phenomenological argument provided above, Sauer emphasizes that areal units, landscapes, are real in a different way than the objects of physiography. Instead of searching for universal criteria to construct areal units, to ‘sieve’ through the infinite amount of geographic impressions, Sauer (1925: 27) acknowledges that

in the selection of the generic characteristics of landscape the geographer is guided only by his own judgment that they are characteristic, that is, repeating; that they are arranged into a pattern, or have structural quality, and that the landscape accurately belongs to a

specific group in the general series of landscapes.

Geography is hence, Sauer (1925: 27) continues, “unable to establish complete, rigid logical control” over its areal objects.

In the following section, Sauer (1925: 30) goes on to detail the corresponding method to investigate landscape: *morphology*. In line with a phenomenological approach, Sauer (1925: 30) prefaces his methodological discussion that “a priori theories” concerning the content of landscape must be suppressed. Of the three postulates of morphology Sauer (1925: 30) discusses, the postulate of “a unit of organic or quasi-organic quality”, a “structure” consisting of “forms”, is of special import for his phenomenological approach. The “organic analogy” is employed by Sauer (1925: 30) as a “working device, the truth of which may perhaps be subject to question, but which leads nevertheless to increasingly valid conclusions.”

Sauer (1925: 30) traces his approach back to Goethe, with whom the “term ‘morphology’ originated” (see also Kenzer, 1985: 258). Touching on what I discussed previously, Sauer (1925: 30) emphasises that Goethe “was interested in the nature and limits of cognition”, which become evident in his understanding of ‘concept’ and ‘form’. His “form studies”, Sauer (1925: 31) goes on to explain, originated from the aforementioned insight that “one needn’t seek anything beyond the phenomena; they themselves are the theory” (Goethe, [1833] 1953: 432, translation MH).

In line with my reconstruction of Goethe’s phenomenology of the concept, Sauer (1925: 31) points out that the morphological approach “rests upon a deliberate restraint in the affirmation of knowledge”, it “presupposes a minimum of assumption; namely, only the reality of structural organization” (see also Sauer, 1924: 18-19). Goethe’s science, which “perpetually *tests* and *tries* to express the ineffable rule of its own conceptualisation[s]” (Muenzer, 2021: 33), assumes nothing apart from the fact that there is such a rule (or pattern) to be expressed, much like Humboldt sought to express the rule which unifies landscape.

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Figure 9: Diagrammatic representation of the morphology of the natural landscape
(Sauer, 1925: 44).

Later, Sauer expresses the structural organisation of “natural landscape”, represented schematically in Figure 9. According to Sauer, each landscape

becomes known through the totality of its forms. These forms are thought of not for and by themselves, as a soil specialist would regard soils, for example, but in their relation to

one another and in their place in the landscape, each landscape being a definite combination of form values. Behind the forms lie time and cause. The primary genetic bonds are climatic and geognostic, the former being in general dominant and operating directly as well as through vegetation. [...] These factors are justified as a device for the connection of the forms, not as the end of inquiry. They lead toward the concept of the natural landscape which in turn leads to the cultural landscape. The character of the landscape is determined also by its position on the time line. Whether this line is of determinate or infinite length does not concern us as geographers. In some measure, certainly, the idea of a climax landscape is useful, a landscape that, given a constancy of impinging factors, has exhausted the possibilities of autogenous development. (Sauer, 1925: 41)

The above may be read as Sauer's attempt to conceptually clarify the unity of landscape by analysing a landscape's composite parts, analogous to Humboldt's emphasis on vegetation to clarify the experience of a landscape's unity. The parts which compose a landscape are forms, and not the objects of the soil specialist or the botanist (which Hettner and Schmitthenner sought to 'sieve through'). Instead, the forms are phenomenologically given in interrelation with each other and with the total formation of landscape. Using Goethe's concept, I describe the natural landscape as a form as well, composed of the others. Any single landscape we see is a systolic moment in the overall process of a landscape-form. The rules which govern the forms expressions are analytically uncovered in Sauer's distinction between geognostic, climatic, and vegetational factors: each contribute to the overall logic of the landscape-form, giving shape to each other (climate, land, vegetation) and the total landscape in the process. Natural landscapes, phrased in the language introduced early, are tensions which resolve into their corresponding "climax landscapes" when their "autogenous development" is exhausted; their final systolic form.

Sauer's individual forms—climate, land, sea and coast, and vegetation—are "force fields" in their own right. "As a form, climate is an areal expression, the sum of the atmospheric features of the area." (Sauer, 1925: 41-42) This "areal expression", analogous to Humboldt's total impression, cannot be traced back to its composite physical parts. Earlier, Sauer (1925: 33) celebrated Köppen's "trials at climatic synthesis" precisely because he refrains from "genetic explanation", as Hettner (1911b) attempted. "Climatology has been phenomenologic rather than genetic." (Sauer, 1925: 33) For this reason, "climatology is areal reality; meteorology is general process." (Sauer, 1925: 42)

Summarising Sauer's approach, neither natural landscapes nor their constitutive forms can

be delineated in nature by circumscribing a sort of line around them. Equally, no universal principle can be found which would aid in the delineation of landscape, if one were simply presented with the results of individual natural sciences. Instead, landscapes are delineated through the recognition of the forms which inhere in nature, which are naïvely given.

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Figure 10: Diagrammatic representation of the morphology of the cultural landscape (Sauer, 1925: 46).

The form of natural landscapes, a process of contracting and expanding possibilities of climate, land, sea, and vegetation, becomes the *medium* for humankind to express its own (cultural) forms in a given area (see Figure 10). To adapt to a given landscape means to recognise that within “the wide limits of the physical equipment of area lie many possible choices for man” (Sauer, 1925: 46).

My reconstruction of a phenomenological morphology based on Sauer’s approach goes beyond what Sauer himself argued. According to Sauer (1925: 48), the “morphologic discipline enables the organization of the fields of geography as positive science.” Surprisingly, Sauer (1925: 48) cites Humboldt’s ‘physiognomy’ of landscape as a geographic approach that lies “beyond science”. Although Sauer (1925: 48) recognises that the “best of geography has never disregarded the aesthetic qualities of landscape, to which we know no approach other than subjective”, it is clear that he sees his own approach as being, in contrast, ‘scientific’ or ‘objective’.

It is difficult to square, as an interpreter of the *Morphology*, this critique of the ‘subjective’ with the very origin of the concept of form, according to Sauer himself, in reality as it is ‘naïvely given’ and historically in Goethe’s phenomenological science. In a manner of speaking, Sauer appears to “throw away the [phenomenological, MH] ladder after he has climbed up it.” (Wittgenstein, [1922] 1922: 6.54)

As I hope to have shown, however, Sauer’s significant contribution to the debate around areal realism is (or could have been) the recognition of the phenomenological reality of landscape, of areal units for geography *as a science*, even though he himself “seemed little concerned with the logical foundations of such areal concepts.” (Entrikin, 1987: 78) Instead, Sauer draws a line between his scientific work and the ‘subjective’ work of Humboldt, Banse, Volz, and Gradmann. With the drawing of this line, the possibility of a phenomenological science is crossed out: the phenomenological road Sauer stakes out in his *Morphology* based on Goethe’s work ends abruptly. In a footnote, Sauer (1925: 48) leaves such work to, amongst

others, the fascist geographer Banse, who “has been publishing since 1922 a non- or antiscientific journal, *Die Neue Geographie*, in which numerous good items are enclosed in a repellently polemic shell.”

3.5 Are climates real?

Sauerian phenomenology, I have argued, holds that areal units exist, and that they are phenomenologically available to us as ‘forms’, a notoriously difficult philosophical concept I sought to clarify with my discussion of Goethe’s phenomenology of the concept. That landscapes, Sauer’s areal unit, are available to us phenomenologically, that we experience landscapes is undisputed by both areal realists (Ritter, Humboldt, Sauer) and anti-realists (Fröbel, Hettner, Hartshorne). The controversy between both arises around the ontological nature of areal units: Are we experiencing something real or mere artefacts (or figments) of our own subjectivity (or imagination)?

The relative conspicuousness of landscapes, that they are ‘naïvely given’, that we can see and paint them makes them an obvious object of phenomenological study (Tilley, 1994). They were obvious morphologic objects of study for Sauer in part because geographers had previously undertaken a “naïve descriptive classification of surface forms, as for example in Penck’s *Morphologie der Erdoberfläche*, which is chorologic morphology” (Sauer, 1925: 32; see also Penck, 1894).

Turning toward climate, the phenomenologically inclined geographer is presented with a problem: What are the ‘naïvely given’ forms or shapes of climate? In his definition of climate, Humboldt ([1845] 1845: 323-324) argues that “the term *climate*, taken in its most general sense, indicates all the changes in the atmosphere, which sensibly affect our organs”. Recalling the Ritter-Fröbel debate, are these changes experienced as part of the global atmosphere, or does the atmosphere change in distinct ways in distinct places, constituting ‘climate-individuals’, zones or regions? If both climate (as a global, horizontal phenomenon) and climates (as a more local, vertical phenomenon) exist, where would the geographer’s incision apply pressure, either between the climate and climates, or between climates themselves?

Hettner, who wrote his PhD thesis on the climate of Chile and West-Patagonia (Hettner, 1881), was aware of this problem of climatic delineation. As he explains “the earthly atmosphere contains no relationship of forms, like on the solid and, in a sense, on the fluid surface of the earth.” (Hettner, 1911b: 425, translation MH) Climates do not appear to be naïvely given in the same way surface forms are. Are they, then, available to phenomenological study? Or are they, as Hartshorne (1939b: 499) argues by analogy, perhaps unreal in much the same way as landscapes, regions, and areas are?

In light of this problem, it may appear surprising that Sauer sees the prototype for his own phenomenological and morphological approach in contemporary climatology.

Climatology has been phenomenologic rather than genetic. In spite of very scant knowledge of the origin of climatic conditions, the facts of climate have been summarized in terms of their geographic significance most admirably. In particular Köppen's series of trials at climatic synthesis, carefully developed as to biotically critical values, admirably restrained as to genetic explanation, are among the most important if not the most important contribution in this generation to a general geographic morphology. (Sauer, 1925: 33)

Following Sauer's line of reasoning, climatology is phenomenological out of sheer necessity: The origins of climate(s) cannot be explained genetically, in the way that Davis' (1899), for instance, attempts to explain the origins of surface forms with his genetic-morphological approach. In line with his critique of environmental determinism, Sauer is sympathetic towards climatology due to its (necessary) restraint in theorisation and consequent emphasis on description. Köppen's climate classification, which Sauer cites as a model for his *Morphology*, is an example of such an approach.

3.5.1 Morphological climate

Köppen's exercise in delimiting different climatic regions is continued to this day, an example of which is Kotték et al.'s (2006) updated "World Map of Köppen-Geiger climate classification". Looking at the global map of the earth's climatic regions (see Figure 11), the aforementioned question arises how the various regions, depicted in different colours, are delimited. Where does one region begin and the other end?

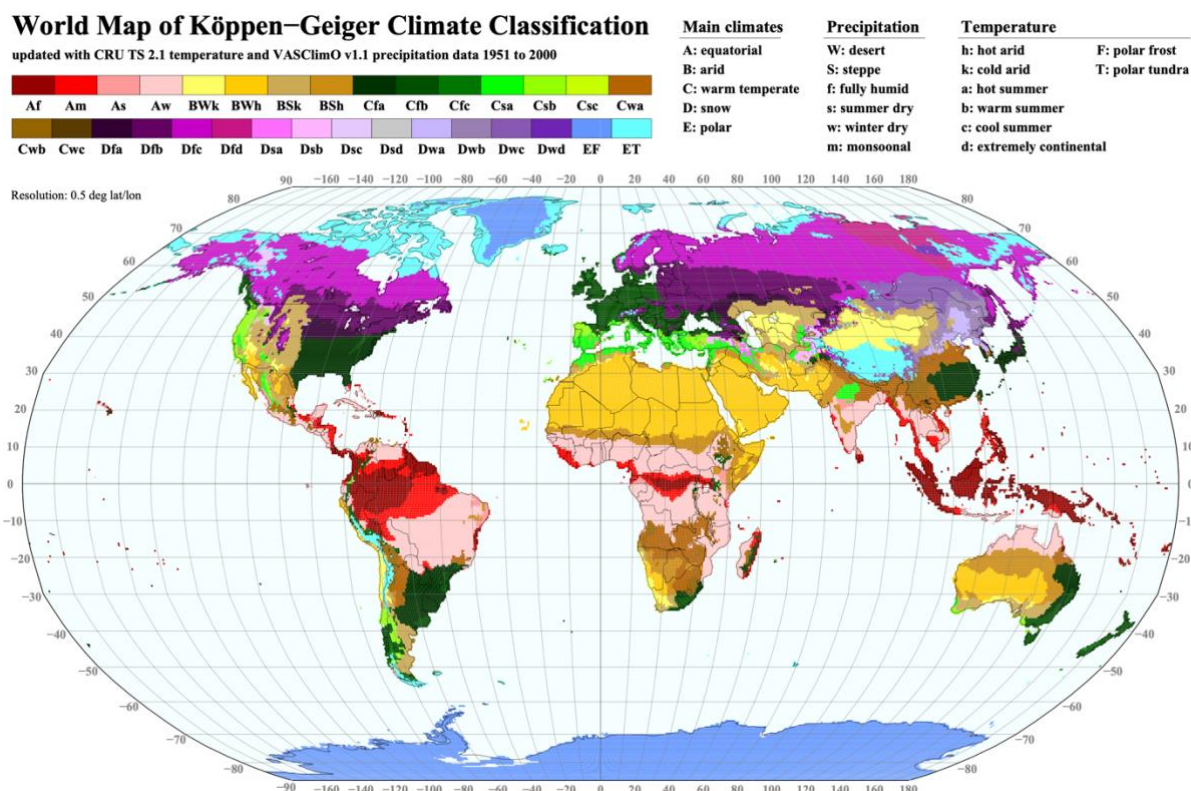


Figure 11: “World Map of Köppen–Geiger climate classification updated with mean monthly CRU TS 2.1 temperature and VASCLimO v1.1 precipitation data for the period 1951 to 2000 on a regular 0.5 degree latitude/longitude grid.” (Kottek et al., 2006: 261)

In the case of the creation of this climate classification map, the regions emerge from a division of the earth into a grid with squares of equal size (see Figure 12). The size of each square in the grid, the resolution of the map, is determined *pragmatically* by the density of meteorological data; the more air temperature and precipitation stations that are available, the higher the possible resolution (Beck et al., 2018: 2). Each square then forms a coherent unit: a definite relation between temperature and precipitation.

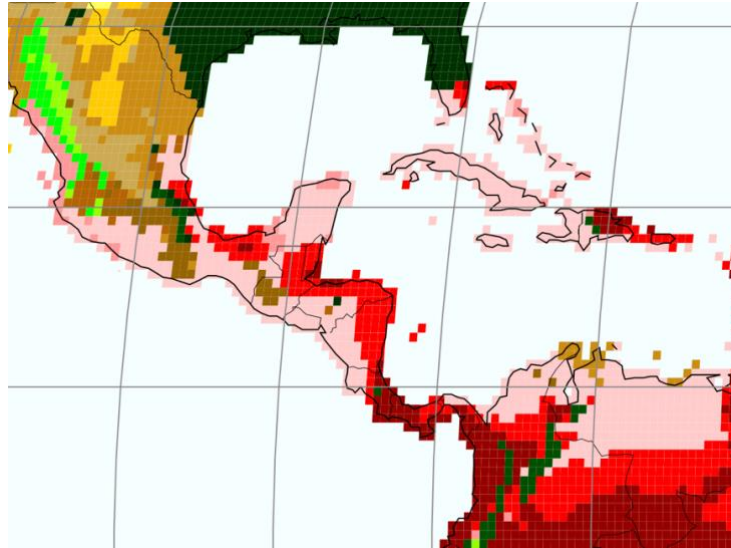


Figure 12: cropped selection from “World Map of Köppen-Geiger climate classification updated with mean monthly CRU TS 2.1 temperature and VASCLIMO v1.1 precipitation data for the period 1951 to 2000 on a regular 0.5 degree latitude/longitude grid.” (Kottek et al., 2006: 261)

At this stage, if each strictly identical unit were given the same colour, the terrestrial surface of the earth would resemble a dazzling or cacophonous mosaic. The Köppen-Geiger classification brings order to this chaos by classifying together units which are *close enough* to constitute a single climatic region, enabling one to orient oneself in this “confusingly colourful picture” (Köppen, 1936: 5, translation MH).

Köppen is aware of the danger that the classification of differing units under a single category, of defining certain “threshold values” (Köppen, 1936: 5, translation MH; see also Hettner, 1911a: 677) beyond which one climatic region turns into another, risks being arbitrary. What helps Köppen avoid this difficulty is the ontological presupposition he makes concerning the reality of climates (as areal units) at the very outset of his discussion:

Aside from the extensive investigation into the individual elements of climate [...], we must strive to reach an overview of the greater features of the areal distribution of climates, of their similarities and differences. In doing so, we must investigate *the climate as a whole*, not its individual elements, because climate affects both humankind and the rest of nature through its *cohesion*, and not separately through its individual elements: the same amount of precipitation, for instance, is something completely different if it falls in heat or in frost [...]. (Köppen, 1936: 5, translation and emphasis MH)

The assumption that there is such a thing as a climate with its regions, affecting us and the environment in distinct ways, allows Köppen to check his classification of climates against the

areal affects of climates, namely, to use Köppen's flowery expression, the “plant-dress of earth [Pflanzenkleid der Erde]” (Köppen, 1936: 6, translation MH).

The climates of earth are the fixed frame of the loom in which the plant kingdom is the warp, animals and humankind the weft of the fabulous fabric. Yes, one may call the plant cover the crystallised, perceptible climate, in which some features are more apparent than in the data of our instruments. (Köppen, 1936: 6, translation MH; see also Köppen, 1900)

Taking the areal distribution of plants as a reference point, Köppen—a botanist and zoologist by training—is able to classify measurements together to form larger surfaces on the map (see Figure 13). Analogously to Humboldt's argument for the importance of vegetation for the delineation of landscape, here too vegetation allows for ‘total climate impressions’ to emerge at a scale commensurable with human comprehension. Anticipating Sauer's morphological approach, in Köppen's climate maps, climatic and vegetational forms constitute distinct units of (geographical) analysis.

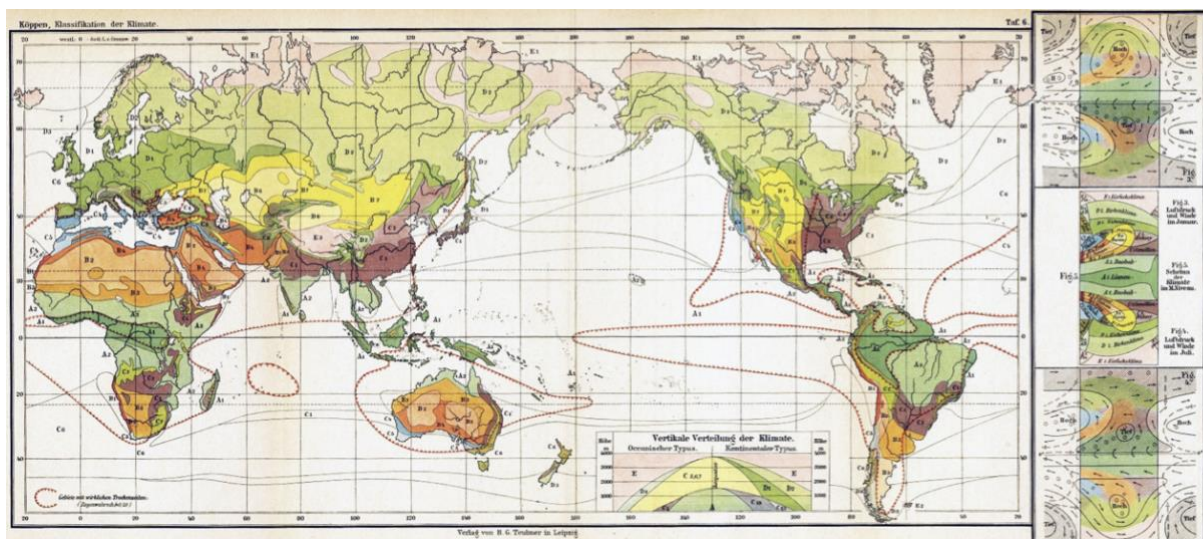


Figure 13: Köppen: classification of climates (Köppen, 1900).

3.5.2 Are climates areal units?

Köppen's climate classification is morphological in that it assumes that climate takes on distinct forms or shapes across the earth's surface. In line with Sauer's argument, the fact that the geognostic, climatic, and vegetational factors which constitute a landscape are interlinked is what allows us to infer climates from vegetation, as Köppen does. Without this form-principle, the problem of thresholds outlined above could not be resolved. Looking at

meteorological data, and recalling the problem of vagueness, where would one climate otherwise begin and another end?

Hettner, as alluded to above, faced the problem of delineating climates too. As Hettner is careful to point out, he already studied the classification of climates in his doctoral dissertation from 1881: “[My method] was thus almost completely developed when Köppen sent me his nice work on the classification of climates, in many ways related to mine, for publication in the G.Z. [Geographische Zeitschrift]” (Hettner, 1911b: 431, translation MH).

Hettner’s own discussion of climate begins by distinguishing weather from climate: Even though we continuously experience changes in weather, weather has

in every area [Orte] on the earth’s surface a definite general character [...]. [...] This totality of the weather-phenomena of an area is what we call *climate*.” (Hettner, 1911b: 425, translation MH)

In line with Köppen’s analogy that the “climates of earth are the fixed frame of the loom”, Hettner (1911b: 425) too argues that because there is a characteristic climate for every area on the earth’s surface, differences in climate account for differences in organic and inorganic life. Climates thus become the principal factor in areal differentiation.

Hettner’s (1911b: 426-427) discussion of how we come to know climate is instructive of the role experience plays in climatology. Hettner first explains that our

knowledge of climates was, for a long time, very indefinite and inexact. Only on the basis of crude observation and subjective sensation or through inferences from after-effects, namely from bodies of water and the plant kingdom, was one able to understand the relationships of warmth, wind, and humidity of an area. (Hettner, 1911b: 426, translation MH)

Hettner goes on to discuss how the invention of meteorological instruments through-out the 17th, 18th, and 19th century, together with the establishment of meteorological stations, helped make “sharp quantitative data” (Hettner, 1911b: 425, translation MH) possible. However, Hettner warns that

this is a one-sidedness that will take bitter revenge, if one completely limits oneself to it and disregards ordinary observation. Instrumental observations are not objectively sufficient; there are some weather-processes which one cannot capture, but which are only perceptible to the eye or feeling [sic!] and which cannot be grasped quantitatively, but qualitatively. Hann repeatedly inculcated in meteorological observers that they must,

aside from watching their instruments, grasp and describe the general weather-processes, in order to be able to elicit in others a clear idea of the climate of their home. (Hettner, 1911b: 426–427, translation MH)

Aside from the phenomenology of weather-processes, Hettner emphasises the importance of bodies of water and the “character of vegetation” (Hettner, 1911b: 427, translation MH) for understanding climate when weather stations are far apart; they provide the foundation for generalisations of characteristic weather, i.e. regional climates.

The language of distinct areas having a particular climatic character appears to both contradict Hettner’s statement that “the earthly atmosphere contains no relationship of forms”, as well as his more general critique of areal realism. Are, in Hettner’s view, climate-individuals real?

3.5.3 Genetic climatology

The possibility of an areal realism based on climate is quickly dispelled by Hettner as he begins to distance himself from Köppen’s work, explaining that he shall “arrive at the same goal [a classification of climates, MH] following a different path.” (Hettner, 1911a: 676, translation MH; see also Köppen, 1936: 9) Hettner’s critique of Köppen is similar to Sauer’s critique of both Davisian morphology and environmental determinism: it is too theory-laden.

An illustrative example of Hettner’s critique is his scepticism towards climate maps. According to Hettner (1911b: 427-428), they (i) exaggerate and are overly reliant on numerical data, given that many atmospheric phenomena, such as cloud cover and precipitation, are only partially accounted for with quantitative methods. Given their synoptic character, they are (ii) unable to represent “the complete character of weather-progression” (Hettner, 1911b: 428, translation MH). And finally, they (iii) “isolate the different weather-factors from one another” (Hettner, 1911b: 428, translation MH). This leads Hettner to conclude that

Most climatological representations are much too static and too little physiological. In their pursuit of exactitude, they neglect many sources of instruction and leave many properties of climate, for which there are no quantitative expressions, by the wayside; they are boring and rigid, they lack life and with that, finally, that which they believe to be in possession of with their numbers: complete scientific character. (Hettner, 1911b: 428-429, emphasis and translation MH)

The static properties on which climatic maps are based are, according to Hettner, “climatic

after-effects” (Hettner, 1911b: 430, translation MH). Basing one’s climate classification on “individual natural phenomena”, such as the “total character of vegetation” (Hettner, 1911a: 678, translation MH), biases, in Hettner’s eyes, the whole process. Köppen’s and Sauer’s approach to climate is hence premised on a theory of the relationship between climate and vegetation that is insufficiently justified or biased.

Although Hettner acknowledges that Köppen’s approach is “the most complete” (Hettner, 1911a: 676, translation MH) amongst his contemporaries, climatology, in his eyes, would fall short of its standards as a science were it not to investigate the “primary causes” (Hettner, 1911b: 429-430, translation MH) behind its facts. Hettner admits that climatology cannot complete such a study “to the fullest extent”, but emphasises that

in broad lines, she is very well capable, more so than other parts of geography and the specific natural sciences generally. The great main facts of the genetic relation of atmospheric phenomena are known to us. That is why one can dare to try erect the theory of climatology from the ground up, even if one may not, at times, be able to establish the connection, but must rather be content pointing to the blind-spots in our knowledge. (Hettner, 1911b: 430, translation MH)

The only way to arrive at “a climatological classification with general validity” (Hettner, 1911a: 678, translation MH), i.e. one that is not premised on a special interest in plants or on the ratio between certain meteorological averages, is then to start with the relation between “geographic location and the character of atmospheric circulation” (Hettner, 1911a: 678, translation MH). Instead of first taking a *vertical* view on climatic zones as areal units, as Köppen and Sauer do, Hettner aims to first offer a genetic analysis of the global areal distribution of climate *horizontally*. This is precisely the exercise Sauer deemed impossible 15 years later: genetic climatology.

The primary causes for climate are then not to be found in a single climatic region, but by studying the global phenomenon of “atmospheric circulation, i.e. the system of air pressure and winds” (Hettner, 1911b: 430, translation MH), which is shaped by solar radiation and the rotation of the earth. This global view of climate must be antecedent to the study of individual climatic regions.

A climatic classification which does not first consider atmospheric circulation must always be an artificial one, because, although it may be able to grasp the individual phenomena, it will never be able to correctly comprehend the totality climatic relations.” (Hettner, 1911a: 677, translation MH)

Focussing on the genesis and ‘physiology’ of climate, Hettner draws up a number of figures—alternatives to climate maps and similar to the early IPCC figures discussed in Section 2.3.1—to explain the emergence of atmospheric circulation in motion, introducing solar radiation (see Figure 14), atmospheric circulation (see Figures 15 and 16), and air pressure differentials and wind depending on seasonality and the relation between sea and land (see Figures 17, 18, and 19) one after another.

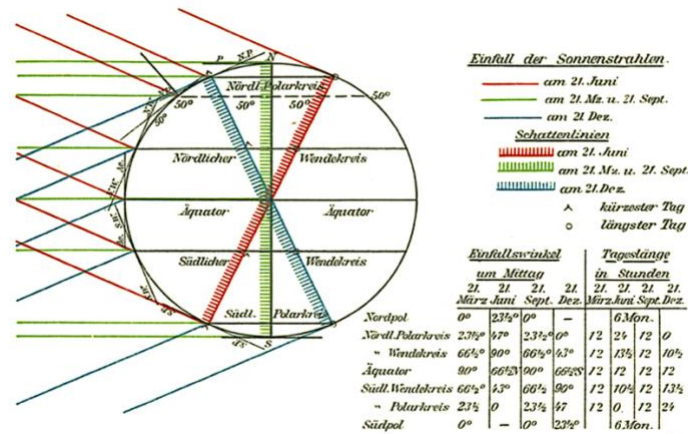


Figure 14: Incidence angle of solar radiation and length-of-day in different seasons (Hettner, 1911b).

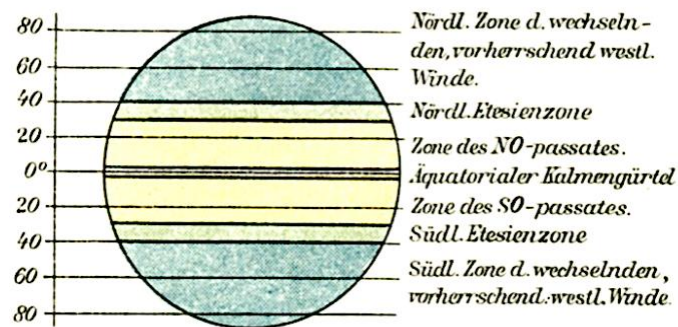


Figure 15: The zones of atmospheric circulation on a homogenous water-globe (Hettner, 1911b).

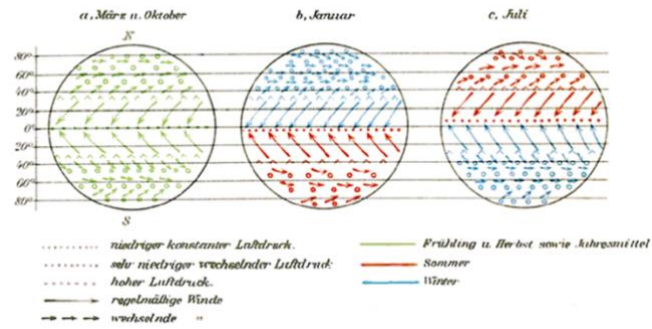


Figure 16: The normal atmospheric circulation on the homogenous earth-globe (Hettner, 1911b).

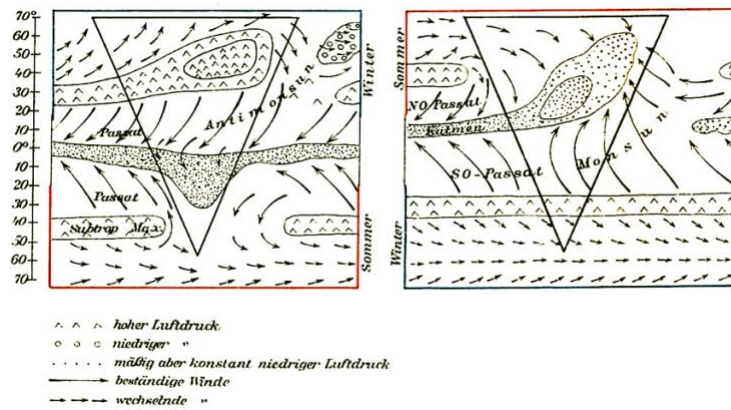


Figure 17: Schema of the development of air pressure and winds over a continent (Hettner, 1911b).

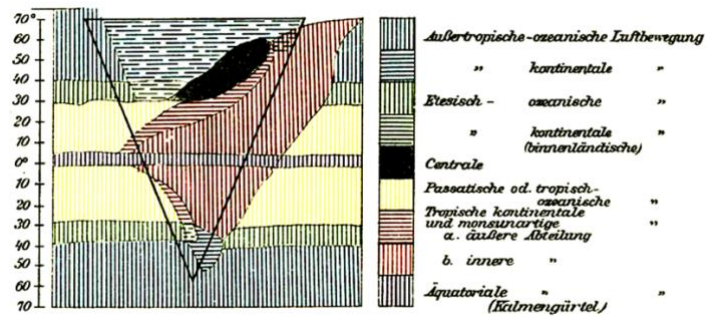


Figure 18: Typical movement of air over a continent (Hettner, 1911b).

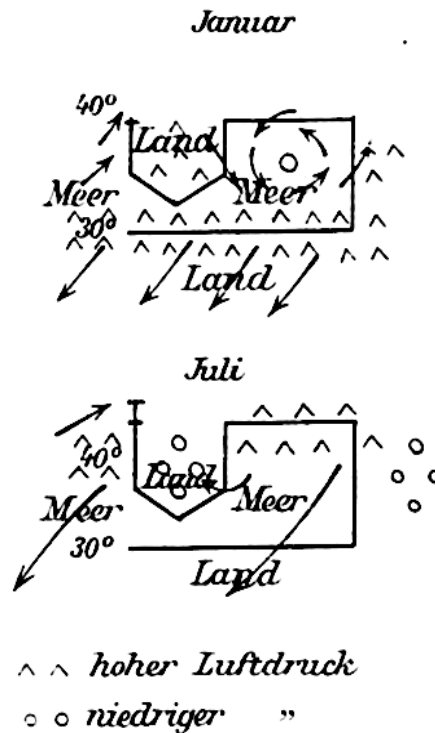


Figure 19: Influence of land and sea in the Etesian zone (Hettner, 1911b).

Combining these factors together, Hettner (1911a: 678-685) gives a genetic account of various climates, working himself away from the equator. Comprehension of the general rules governing the global climate allows the geographer, following Hettner’s model, to infer the distinct climate of a place from ‘primary’ facts without having to assume that individual climate regions exist.

Once more, individual climates are of a secondary nature; not truly real, but artefacts of human subjectivity. Ultimately, Hettner views climates in much the same way he views areal units more generally: the earth as a whole, the global climate as a whole is a real individual unit, but any subdivision within either is arbitrary. Delineating individual climates would, in Hettner’s view, always necessitate abstracting from global atmospheric processes by selecting certain properties and thresholds that would facilitate such delineation. Ultimately, as Hettner argued previously with regards to regions and landscapes, the choice of said properties and thresholds does not follow with necessity from nature, but is contingent upon human subjectivity, i.e. which properties and thresholds the researcher deems important.

As I discuss at length in my discussion of Husserlian phenomenology in Section 5.3, a phenomenologist might apply a genetic approach to Hettner’s development of climatology itself. Having seen Köppen’s climate map once, would one ever be able to ‘unsee’ it in attempts to come up with one’s own climate classification? Although this question is unanswerable from

a methodological perspective, the question arises if Hettner truly arrives at his local climates through deduction from global atmospheric processes alone, or if his experiential awareness of local climates as the characteristic weather of an area is what gives his genetic climatology its meaning, if a phenomenological areal realism ultimately guides him to arrive at distinct types of climate. In Humboldt's case for instance, his travel to North America was instrumental to recognising that the differences in climate on either side of the Atlantic contradict the idea of climate zones simply delineated according to latitude (Schneider, 2018: 155). As I argue later, even a genetic approach to climate remains tied to the climates of the life-world (see Section 5.3.4.2).

3.5.4 Are climates possible?

In a much later work, Edwards (2010: 1) argues that a much later event, the publication of a photograph of earth taken from Apollo 8 in 1968,

meant seeing the world as a knowable entity—a single, interconnected whole—but in a sense that lacked the secure stasis of maps, parlour globes, or pre-Darwinian cosmologies. Instead, it meant grasping the planet as a dynamic system: intricately interconnected, articulated, evolving, but ultimately fragile and vulnerable. Network, rather than hierarchy; complex, interlocking feedbacks, rather than central control; ecology, rather than resource: these are the watchwords of the new habit of mind that took Earth's image for its emblem. (Edwards, 2010: 1-2)

Seeing the earth, and climate in particular, from this perspective, Horn (2018: 15) argues with Edwards in mind that “there are no such things as *climates* but only one *global* climate”. This notion of climate, which Hettner and contemporary climatologists share, has

created a conception of climate that is entirely abstract, standardised, and computable. Climate has become an object outside the range of human experience, everyday life, and social and cultural practices—an external scientific object [...]. (Horn, 2018: 15)

Although Hettner's diagrams and the ‘blue marble’ image might seem worlds apart, they both share the “scientific gaze from nowhere, a view from a distance, from outside—a clean epistemic cut between a human observer and nature as an observed object.” (Horn, 2018: 15) Horn (2018: 15) calls this process the “externalisation of climate”.

Hettner's externalisation of climate might be consistent with his broader geographical

framework, but jars with his earlier insistence that we experience climate as the “definite general character” of the weather of an area (Hettner, 1911b: 425, translation MH). Hettner’s warning that quantitative climatology’s one-sidedness will take “bitter revenge, if one completely limits oneself to it and disregards ordinary observation” (Hettner, 1911b: 426, translation MH) rings true in a different way, when viewed together with Horn’s (2018: 16) argument that no “matter how important, even portentous, scientific *evidence*—as opposed to mere sensory *experience*—is, it comes at a price.” One heavy price Horn identifies is our inability to relate to anthropogenic climate change in a meaningful way.

Global temperatures, along with rising planetary carbon dioxide levels, cannot be felt or seen but only measured and computed as abstract models, broadcast through the media, and discussed as policy issues “out there.” We relate to climate change mostly as externalized “facts.” (Horn, 2018: 16)

In light of the more general phenomenological argument I have been advancing through-out this chapter, an externalist approach to climate pays another, more principle price; namely that the climates we experience simply cannot exist. As Ellis (2000: 89) explains with regards to contemporary climatology,

An ideal classification of the climates should reveal all of the climates that occur on the earth, should show the relationships among climates, should allow for subdivisions down to local climates, and should demonstrate the controls on each climate. However, the ideal climate classification will never exist due to the facts that the overall climate system of the earth is too complex and the individual climates them selves are not spatially finite. Therefore, climate classification schemes are generally developed and utilized as dictated by their particular use.

In this respect, Sauer’s assessment of the nature of genetic climatology appears to be right: it can never account for the climates we experience. Hettner would, of course, argue that the assumption of their individuality, character, and unity is itself “mysticism” (Hettner, 1934: 143, translation MH).

However, as I argued following my discussion of Hettner’s critique of areal realism, Hettner’s claim that his approach is not theory-laden is a fallacy in its own right. Distinguishing between the scientific, full reality of ‘primary facts’ and the reality ‘for us’ of areal units is the result of “a different philosophical assumption of science asserted without foundation” (Hartshorne, 1939a: 235), not some sort of pre-ordained necessity. Previously, Hettner (1911b:

428-429, translation MH) argued that morphological approaches to climate were “boring and rigid, they lack the life and with that [...] complete scientific character.” In light of Horn’s critique, the question arises if a phenomenological approach to climate might complete the scientific character of climatology in a way that remains impossible for a genetic approach.

3.5.5 Tiling or painting climate

The debate between Köppen and Hettner once more highlights the opposing onto-epistemological commitments of areal realists (Köppen) and anti-realists (Hettner). The impossibility of individual climate zones is, as I have argued, exemplified in Hettner’s critique of climate *maps*.

In his recollection of the debate around areal realism, Hartshorne helpfully introduces two metaphors to ultimately argue his own anti-realist point:

To make the point clear, we may consider the contrast between an ordinary *painting* and a *mosaic*. In the former any square inch of the painting may be unique in its particular combination of color and line, any appropriately selected portion might appear to have “individuality” of its own, but actually no part is a distinct unit individual. [...] A mosaic on the other hand is formed of individual unit pieces, any one of which taken alone however does not necessarily have “individuality” in the sense of uniqueness, since it may be identical with others, in form as well as color. We may avoid this confusion by using the term “unique character” for the former sense of “individuality” and confining “individual” to definitely limited objects. (Hartshorne, 1939b: 440, emphasis MH; for an excellent overview of the work these metaphors do, see also Nelson, 2019)

For the areal anti-realist, the earth’s surface must more closely resemble a painting than a mosaic: dissecting any part out of the earth’s surface is an act of human abstraction that does, in a sense, violence to the larger picture. For the areal realist, the earth’s surface must more closely resemble a mosaic, although the individual pieces must not be of the same size and shape and can in principle overlap (perhaps, collage would be a better metaphor). As Hettner and Köppen both agree, dividing or identifying the mosaic pieces of the earth’s surface would require some principle of delineation. Köppen addressed this problem of thresholds by using vegetal life as a proxy for climate. The more literal mosaic-nature of contemporary climate classification maps introduced earlier is based on a pragmatic response to the problem of data availability: the better data available, the more fine-grained the mosaic.

These more modern climate classification maps based on Köppen’s approach, however, reveal a more principle problem of classifying climate in maps, as I hinted at with regards to Ellis’ (2000: 89) work: Following their logic, is there a highest possible resolution of the grid after which calling each mosaic piece a ‘climate’ becomes nonsensical? To an extent, too high a resolution undoes the work Köppen’s thresholds accomplish. Looking at the progress climate classification maps have made (see Figure 20), questions relating to vagueness, such as “What is the climate of Switzerland?” or “How many mosaic-pieces make a climate?”, begin to re-emerge. With the increase of resolution, one returns to the very problem climate maps were supposed to solve, namely the increasing lack of insight considering ever greater amounts of meteorological data (on this motivation behind Humboldt’s first climate map, see also Schneider, 2018: 118-170).

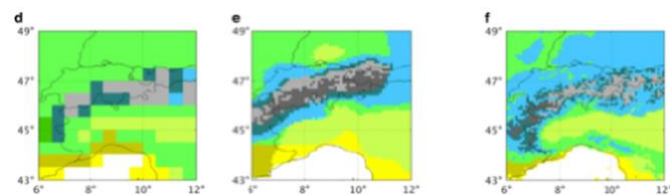


Figure 20: “Historic Köppen-Geiger classification maps for the three previous studies are provided as: (d) Kottek *et al.* (1951–2000); (e) Peel *et al.* (1916–1992); and (f) Kriticos *et al.* (1960–1990).” (Kottek *et al.*, 2006: 261)

In light of this problem, Hartshorne’s critique of mosaic-thinking rings true:

In this case the word “mosaic” is well chosen, since the mosaic is one of the more highly conventionalized, unrealistic, forms of artistic presentation. As an expression of reality, however, it may only be seen from a great distance: the more closely one examines any part, the greater is the falsification of reality. It may be that we must produce such mosaics, since reality is too complex for us to present in all its details, but we are only deluding ourselves if we ascribe to our arbitrarily determined regions an actual character as unit-whole areas. (Hartshorne, 1939b: 452)

3.5.6 Sauer’s phenomenological climate

By way of concluding this chapter, I want to argue that the problems identified in ‘mosaic-thinking’ are artefacts of a more general approach to climate through the metaphors of maps: Looking at climate from above, the epistemic position which facilitates both vertical and horizontal approaches to understanding geographic phenomena, one is faced with the problem

of delineation. Climate is areally differentiated across the earth's surface, but where might one identify discontinuities?

In partial agreement with Hartshorne, a phenomenological account might argue that climate does in fact resemble a painting. However, following Humboldt's approach, this painting is not seen from above (like a map), but from *within* a climate. Climates emerge not through a process of abstraction, but are experienced as 'total impressions' of their general character.

Prior to the publication of the *Morphology*, Sauer and Leighly (1925) co-authored a "Syllabus for An Introduction to Geography". The introductory section "The Field of Geography" gives a written-out account of the history and nature of geography, which includes many of the main themes of the *Morphology*, excluding the discussion of culture. There, one finds an early version of Sauer's later diagrammatic representation of landscape (see Figure 21).

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Figure 21: Diagram of the structure of landscape (Sauer and Leighly, 1925: 7).

The remaining topics of the "Syllabus"—space relationships, climatic elements and climates, and the land and the edaphic elements—are only discussed in a series of headings and bullet-points.

Sauer and Leighly (1925: 24) begin their discussion of "climates or climate regions" with an admission, recognising the vague nature of climates: "Boundaries of climates are rarely sharply drawn – belts rather than lines" (Sauer and Leighly, 1925: 24). For the purposes of the "Syllabus", Sauer and Leighly (1925: 24) explain that the

only selected parts of the world are considered and no attempt is made at an inclusive climatic classification of all land areas [...] It is not possible at present to make a classification of climates in which these are grouped according to the causes of their climatic characteristics because our knowledge of such causes is still very fragmentary [...] We must therefore classify climates descriptively, that is by contrast in nature of temperature and precipitation [...] The larger climate types of the climatic classification of Köppen of 1918 constitute the best presentation of climates as yet made. (Sauer and Leighly, 1925: 24-25)

Once more Sauer and Leighly (1925) admit to the impossibility of genetic climatology and fall back on a descriptive approach, although the word 'phenomenology' is not used here. They go on to offer a descriptive account of the different climate zones according to Köppen, discussing

the relationship between different meteorological averages.

However, Sauer and Leighly (1925) go beyond Köppen's project and include vignettes which give a 'total impression' of a given climate 'from the inside' for every group of Köppen's climate zones. These including more traditional observations by naturalists (Bates, Blanford, Sapper, White), geographers (Buchanan, Holdich, Philippson) and geologists (Gregory), but also accounts by Friedrich Hassaurek, a US journalist and ambassador, T. E. Lawrence, and Benjamin Franklin. Most poetic is the inclusion of a section from the writings of Stevenson (the author of the *Strange Case of Dr Jekyll and Mr Hyde*) on Edinburgh.

Edinburgh is liable to be beaten upon by all the winds that blow, to be drenched with rain, to be buried in cold sea fogs out of the east, and powdered with the snow as it comes flying southward from the Highland hills. The weather is raw and boisterous in winter, shifty and ungenial in summer, and a downright meteorological purgatory in the spring. The delicate die early and I, as a survivor, among bleak winds and plumping rain, have been sometimes tempted to envy them their fate. For all who love shelter and the blessings of the sun, who hate dark weather and perpetual tilting against squall, there could scarcely be found a more unhomely and harassing place of residence. To none but those who have themselves suffered the thing in the body, can the gloom and depression of our Edinburgh Winters be brought home. For some constitutions there is something almost physically disgusting in the bleak ugliness of easterly weather; the wind wearies, the sickly sky depresses them; and they turn back from their walk to avoid the aspect of the unrefulgent Sun going down among perturbed and pallid mists. (Stevenson cited in Sauer and Leighly, 1925: 61)

Although these vignettes signal a general awareness for the necessity of a truly phenomenological approach in order to understand the nature of a climate, Sauer and Leighly (1925: 66) ultimately argue that "[i]deas of climate, if they are to attain concreteness and definition, must be referred to quantitative data", in line with Sauer's later argument in the *Morphology* against 'subjective' approaches to geography. The following chapters are dedicated to thinking more deeply about what it might mean for climate to be phenomenologically real; following Sauer's phenomenological 'road not taken'.

4 A counterfactual etymology for climate

Where the previous chapter set out to develop a Sauerian phenomenological approach to climate beyond what Sauer himself had written, this chapter sets out to develop a phenomenological concept of climate and its changes based on an alternate, counterfactual etymology of ‘climate’. After highlighting the latent, abstract nature of *klima* [κλίμα], the traces of which extend into our present-day scientific understanding of climate, I (re-)construct a concept of climate that *might* have emerged based on a different Ancient Greek term: *hora* [ώρα]. Through a geographical reading of Plato’s dialogues, I develop a first phenomenological account of climate and its changes. Turning to Aristotle’s work on *Metaphysics*, I go on to give further shape to a phenomenological realism by reflecting on what sort of ‘thing’ or ‘being’ climate is. I conclude this chapter by turning to recent work on the phenomenology of *weather* in order to highlight the importance of a phenomenology of *climate*.

4.1 Historical approaches to climate

In turning back to past usages of a term and its linguistic origins, an etymological approach is historical. To help situate my own approach, I here briefly reflect on other approaches to climate in historical geography (for an excellent overview, see also Offen, 2014).

What climate is and how it is known is of central concern to historical geography. Through a historical lens, climate no longer appears as the mere “statistical description [of average weather] in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years” (IPCC, 2013: 1450). Indeed, such a “definition of climate as a statistical index is an *anomaly*.” (Fleming and Jankovic, 2011: 2, emphasis MH; for an overview of different evolutions of climate concepts, see also Ford and Norgaard, 2020; Heymann, 2010; Horn, 2018; Leduc, 2010) Historical geographers have, instead, been interested in, for instance, how climate has become entangled in questions of morality and imperialism, how climate change has been rhetorically constructed, and whom, once rhetorically constructed, narratives of climate change (crisis) serve. (Livingstone, 1991; Livingstone, 2002; Bravo, 2009; Daniels and Endfield, 2009; Hamblyn, 2009; Liverman, 2009; Adamson, 2012; Mahony, 2016).

As I highlighted in Chapter 2, cultural geographers and anthropologists have gone further in questioning the very nature of climate itself (Strauss and Orlove, 2003; Brace and Geoghegan, 2011; Barnes and Dove, 2015; Dietzsch, 2017; Hulme, 2017; Knox, 2020; Schnegg, 2021).

In his account of the social construction of weather and climate predating this literature, Stehr (1997: 164) argues that these questions concerning climate generally do *not* arise precisely because they are

concealed by the routine, the ease and the frequency with which we use these terms in a variety of contexts. [...] Yet, the very centrality of these terms also hides ambiguity, fragility and perhaps a lack of real comprehension (see also my discussion of climatic certainties in Section 2.1).

Cultural approaches to understanding climate and its changes generally agree with Stehr that climate is “a largely taken-for-granted setting” (Stehr, 1997: 167), though they might disagree what shape this setting takes (see also Ford and Norgaard, 2020). The idea of climate functions as a mediating and stabilizing force between weather and culture, lending coherency and regularity to otherwise capricious weather (Hulme, 2017: 2). By extension, climate also coheres

societies in distinct ways as they come to adapt to their characteristic weather (Watsuji, [1935] 1961; Jasanoff, 2010). Perhaps it is the uncertainty and ambiguity around how and to what extent climates do this—climate’s “near infinite plasticity” (Hulme, 2009: 28)—that gives climates such imaginative power and consequently makes them such rich objects of historical geographic and anthropological study.

According to one dominant approach to studying climate in historical geography, to study climate means to consider how people conceive of climate. Climate here acts as an object around which otherwise ephemeral aspects of human culture materialise: What people say and write about their own and others’ climates reveals something about their deeper seated ontological, epistemological, political or moral beliefs (Golinski, 2007; Jasanoff, 2010; Adamson, 2012; Livingstone, 2012; Coen, 2018). They sediment in climate concepts. Conversely, by studying what someone says and writes about climate, one can hermeneutically uncover these underlying beliefs, which might have otherwise remained ephemeral (Livingstone, 2000).

To become sites of sedimentation, climates must be relatively stable. They must endure longer than what they shape: weather and culture. Rapid anthropogenic climate change then, as I argued previously in Section 2.4, presents a conceptual challenge. Climate no longer fulfils the stabilising function at its very centre: “the possibility of [climatic] stability is a chimera” (Hulme, 2017: 152). Consequently,

Climate can no longer be helpful as an idea that sits between weather and culture because weather and culture are fusing into a single reality with no independent mediator; we are the weather and the weather is us [...]. (Hulme, 2017: 152)

Herein lies the limit of a historical-cultural approach to understanding the nature of climate and its changes; to approaching climate as an idea. With the undoing of Holocene climates, their sedimentary nature erodes too. How, then, does one account for *what* is changing with climate change?

Turning to the present, although the increasing public consciousness of anthropogenic climate change certainly calls Stehr’s argument that climate is ‘a largely taken-for-granted setting’ into question, the routine, ease, and frequency with which terms such as climate change, crisis or emergency are used may hide ambiguities and fragilities, may betray a lack of real comprehension of a different sort and cover over “ontological inconsistencies” (Nightingale et al., 2019: 347). Using Plato’s idiom, relying on too ambiguous an understanding of ‘climate’ risks turning climate into a “leaky sink” (Plato *Cratylus*, 440c),

slowly draining whichever meaning one places in it.

A key motivation behind the counterfactual etymology of climate to follow below is hence to draw on historical sources—the origins of the concept of ‘climate’—in order to respond to the ‘ontological inconsistencies’ which result from a partial or one-sided understanding of the nature of climate and its changes.

4.2 A new climate for geography

In line with what I observed in Chapter 2, Jasanoff (2010: 237) argues that

Climate science cuts against the grain of ordinary human experience, the basis for our social arrangements and ethical instincts, at four interrelated levels: communal, political, spatial and temporal. [...] Climate, moreover, is spatially unbounded. It is everywhere and nowhere, hence not easily accessible to imaginations rooted in specific places. And, unlike the weather, climate change occurs over spans of time that are not easily assimilated to circadian or seasonal rhythms: it is not perceptible nor provable as a day or year of human life shades into the next. [...] These are radical shifts, and we should not be surprised if it takes decades, even centuries, to accommodate to such a revolutionary reframing of human-nature relationships.

As the title of her essay already suggests, climate change then necessitates a “new climate for society” (Jasanoff, 2010); changes in climate necessitate a change in our concept of climate.

Arguing from a feminist new-materialist background, Colebrook (2012: 30) too observes that climate change not only describes “a mutation of this climate (warming, depleting, becoming more volatile) but an alternation of what we take climate to be”.

Responding to Colebrook’s call Neimanis and Walker (2014: 560) have gone on to engage in “concept-creation” in order to develop a feminist new-materialist account of the relationship between weather and climate (change) (on concept-creation, see also Grosz, 2011). In line with Jasanoff (2010), Neimanis and Walker (2014: 559) call into question the “abstract quality” that climate (change) has assumed in “contemporary Western societies”, which stems, in part, from “scientific discourses”. They argue that “these distinctions between climate and weather are tenuous.” (Neimanis and Walker, 2014: 562) Instead, one should “reduce the distance between the enormity of climate change and the immediacy of our own flesh” (Neimanis and Walker, 2014: 562). To close this rift between local weather and global climate, they draw on Alaimo’s

(2008: 238) theory of “trans-corporeality”.

The concept Neimanis and Walker (2014: 560) go on to introduce is *weathering*, which is meant to capture the transcorporeal intertwinement, the “mutual worlding” of both “climate change and human bodies”. Through this prism, climate change and “the fleshy, damp immediacy of our own embodied existences” must be reimagined as “intimately imbricated” (Neimanis and Walker, 2014: 559): “Weathering, then, is a logic, a way of being/becoming, or a mode of affecting and differentiating that brings humans into relation with more-than-human weather.” (Neimanis and Walker, 2014: 560)

Neimanis and Walker (2014: 561) introduce a further concept, “thick time”, to account for how transcorporeality not only extends in space, but also in time, “stretching between present, future, and past”, foregrounding a “nonchronological durationality.” (On inhabiting the diachronic, see also Malm, 2018: 15; on thickness, see also Knebusch, 2008: 7) Experiences of being weathered are then not simply about the current weather, but about climate, about weather present, future, and past. To weather is to experience “the thickness of climate-time.” (Neimanis and Walker, 2014: 561)

4.3 (Re-)creating climate concepts

The practice of concept-creation is not unique to feminist new-materialist approaches to understanding climate and its changes, but lies at the heart of our contemporary scientific understanding of climate too.

4.3.1 klima

Turning to the etymological origin of the word ‘climate’, the concept can be traced back to the Ancient Greek word *klima* [κλίμα], meaning ‘*inclination, slope* of ground’ (Liddell and Scott, 1940). Following Dicks (1955: 248) historical account, the origin of *klima* lies not in geography, but astronomy (specifically the work of Hipparchus): Each point on earth’s surface is ‘sloped’ in relation to celestial phenomena, such as the location of Polaris (the ‘North Star’) in the night sky of the Northern hemisphere.

Obviously the amount of the inclination of the cosmos, measured by the height of the celestial pole above the horizon, gives the latitude of the place of observation; hence the three words κλίμα, ἑγκλίμα and ἑγκλισις used by themselves came to be synonyms for

geographical latitude [...]. (Dicks, 1955: 249)

Gradually, the meaning “slope of the sky” shifted to the slope of the earth itself: the celestial turning terrestrial (Dicks, 1955: 249). The parallels of latitude that thus emerged along the surface of the earth form the boundary lines of different regions, of climatologically habitable and uninhabitable zones according to their relative distance from the equator and poles, described earlier by Aristotle and later more closely identified by Strabo (Strabo, 1917b: II, 505-507; Aristotle, 1952: 181-183; Dicks, 1956).

Mauelshagen (2016: 46, translation MH) makes the case that modern climatology’s very inception is itself tied up with a process of concept-*recreation*, with a “semantic innovation”, first evidence of which is to be found in Montesquieu’s and Espiard De La Borde’s work. Up until the mid-18th century, to speak of the *klima* of a place “was tantamount to offering coordinates, but not weather conditions.” (Mauelshagen, 2016: 41, translation MH) Consequentially, the concept of physical climate, of “a multi-factorial causal concept which explains the heat distribution of an area”, came to replace *klima* as an “almost meaningless, purely descriptive geographic category of place” (Mauelshagen, 2016: 50, translation MH) through a series of re-definitions. Mauelshagen (2016: 51-54) goes on to argue that it was this transition from climate as *descriptive* to climate as a *causal* and *dynamic* concept which allowed the very idea of climate *change*—across time, not across space—to emerge. To trace the emergence of the concept of climate back to the history of meteorology and the development of meteorological instruments, to define climate as the “statistics of weather” is, at best, “only half the story”: “‘Climate’, in the modern sense, is precisely not just the statistics of weather, but a new physical category of the causal description of thermal conditions.” (Mauelshagen, 2016: 53, translation MH)

Both the Ancient concept of *klima* and the modern “neologism ‘climate’” (Mauelshagen, 2016: 51, translation MH), however, share a celestial origin. Their very meaning depends on viewing climates ‘from the outside’, spread across the surface of the earth. Following a distinction made by Gibson (2015) and later Ingold (2007: S25), the climates arrived at in this way are parts of the physical world, but not environments. They make sense to geographers as “exhabitants of the earth” (Ingold, 2007: S25), viewing the earth from a celestial perspective. What would it, instead, mean to *inhabit* climate?

4.3.2 hora

To answer this question, I undertake a third exercise in concept-(re)creation. Following a counterfactual etymological approach, I consider what climate concept *would have* emerged from the older Ancient Greek term *hora* [ὥρα], translated as ‘season’ or, in the plural, ‘climate’ (Herodotus, 1920: I, 142; Liddell and Scott, 1940).

In his *Airs, Waters, and Places*, Hippocrates (1923) discusses the role of *hora*, of seasons and climate on health, the human body, and character (on Hippocrates influence on medical geography, see also Mitman and Numbers, 2003). “Whoever wishes to pursue properly the science of medicine”, he writes, “must proceed thus. First he ought to consider what effects each season of the year can produce [...]” (Hippocrates, 1923: 71) Elsewhere, Hippocrates (1923: 107) discusses how differences in climate lead to differences in the very nature of seasons and their effects. Differences in *season* then describe the changing character of weather over the course of a year (across time), whereas differences in *climate* describe changes in the character of seasons themselves across space.

In the following section, I create a concept of phenomenological climate—as opposed to the aforementioned concepts of abstract and physical climate—based on a re-creation of *hora* as climate. I do so by subjecting three Platonic dialogues, in which *hora* as climate makes an appearance, to a phenomenological reading.¹⁴ In the process, I highlight the methodological kinship between myth, as employed by Plato, and phenomenology. Plato’s “geographical myths” (Essebo, 2019: 526) evidence how both mythical and phenomenological accounts enable “a perspective which can no longer be integrated into the everyday world, whilst simultaneously opening up the facts and circumstances of the everyday world in an intensified way.” (Figal, 2007: 676, translation MH). In general, phenomenology as a discipline has been strongly influenced by Ancient Greek philosophy from its inception (Held, 2005; Drew and Manoussakis, 2006; Moran, 2020). Engelland (2020: 152) suggests that phenomenology “renews the Socratic method of defining by connecting it to experience; defining is a matter of clarifying or explicating the original experience of the topic of investigation.”

My engagement with Ancient Greek philosophy, developing a counterfactual etymology of climate based on phenomenological theory, offers a novel approach to both myth, philosophy, and the history of ideas in historical geography.

Opening up the possibilities of conceptualising and experiencing climate and its changes, I turn to Plato, who might seem an unlikely candidate for a critique of ‘Western’ concepts, to re-

¹⁴ The concept of *hora*, in the sense of climate I discuss, appears across Plato’s writings: *Critias*, 111e; *Cratylus*, 410c, 440c; *Republic*, VII, 516b-c; *Phaedo*, 109a-111c.

imagine climate change through Ancient Greek philosophy. Following Neimanis' and Walker's line of argument, I offer a critique of the 'abstract quality' of climate (change) in 'contemporary Western society' from within the 'Western' intellectual tradition itself.

4.4 Platonic climates

4.4.1 (Platonic) Myth in Historical Geography

Before I delve into Plato's dialogues themselves, it is important to reflect on the role of myth in geographical accounts. In doing so, I seek to avoid one of the pitfalls concerning myths identified by Essebo (2019: 519), namely "that the concept of myth itself is simply left undefined".

Essebo (2019: 515) has comprehensively mapped out "the theory (or, rather, theories) of myth as a conceptual aid in the understanding of how perceptions of place order spatial realities", arguing for a "deepened and mutually beneficial relationship between geography and myth". Essebo (2019: 515) defines myth "as a taken-for-granted belief that alleviates fear, naturalises ideology, and guides everyday behaviour." Essebo (2019: 516) goes on to clarify that "myth need neither be entirely true nor entirely false. Its power lies not in its correspondence with truth but with naturalised societal and individual beliefs." Following Olsson (1974), Essebo argues that "myth is accepted through repetitious and unreflected use" (Essebo, 2019: 518).

Augmenting Essebo's account of myths and their relevance for historical geography in particular, I introduce Plato's usage of myths as a very different kind of "conceptual aid in the understanding of how perceptions of place order spatial realities" (Essebo, 2019: 515). Following Lincoln (1999), Essebo (2019: 520) explains how Socrates and Plato gave myth "a new, less flattering meaning, one that resides with us to this day."

Myths, they claimed, were told by poets and were not to be taken seriously. They were false, inspired, ignorant, and belonged to the (lesser) art of poetry, whilst *logos* was true, reasoned, knowledgeable, and belonged to the science of philosophy. (Essebo, 2019: 520)

However, the relationship between 'irrational' *muthos* and 'rational' *logos* is not as clear cut as this account makes it appear (for a comprehensive discussion on the role of myth in Plato, see also Collobert et al., 2012). Contrary to Essebo's account of myths, in Plato, "myth can also say true things" (Dixsaut, 2012: 28) as myths are "grounded in knowledge." (Collobert, 2012: 87) In Plato's dialogues, myth and 'rational' dialectic argumentation cannot be disentangled.

It is not at all the case that only dialectic represents the true philosophy in Plato's writings:

instead, Plato's myth and his dialectic are complementary and interdependent. [...] Without *logos* there would be in Plato's writings no proofs, no analysis, no verifiability, no intellectual conviction; but without *muthos* there would be no models, no global vision, no belief, no emotional motivation. (Most, 2012: 23)

What distinguishes *muthos* from *logos* in Plato, according to Dixsaut (2012: 34), is that myth "can be and must be interpreted in order to be understood". Contrary to Olsson's account, myths can provoke reflection and concept-creation, instead of reifying concepts or naturalising ideology. Like stories, myths can "help to open up the world, not to cloak it." (Ingold, 1993: 171)

As I show, Plato's myths enable us to reflect on our concepts phenomenologically. "Relating a myth," Dixsaut (2012: 40) writes of Plato, "*is to make us see.*" Plato's myths do so by opening up perception and experience to renewed interpretation in particular ways. Myth is "an *education of vision* insofar as it makes us see differently." (Collobert, 2012: 108)

Myth then also "brings us to correct the erroneous names we give things" (Dixsaut, 2012: 45); myths create concepts. Myths make "evident, not by demonstration but by reaching an elevated perspective, that our mistaken denominations go along with the narrowness of our vision" (Dixsaut, 2012: 46).

As a tool for critically reflecting on perception and experience, the apparent weakness of myths (that they distort reality in particular ways) turns out to be their strength: The very point of particular myths is to misrepresent reality in distinct ways so that essential features of reality come to the fore (Collobert, 2012: 98). Myths can provoke *conceptual intensification* (Figal, 2007: 671). By being *false in a specific way*, myths can reveal a truth that is latent and inconspicuous in everyday perception and experience. Through changes in perspective, myths produce "a shift in cognition that enables us to see from a different angle" (Collobert, 2012: 105), both literally and conceptually. The myths of Plato I revisit below allow us to "come at ecological issues from an oblique angle." (Starosielski, 2019: 2) Herein lies the kinship between myth and phenomenology: a phenomenological approach leads to "a perspective which can no longer be integrated into the everyday world, whilst simultaneously opening up the facts and circumstances of the everyday world in an intensified way." (Figal, 2007: 676, translation MH).

In what follows, I recount two Platonic myths—one of caves, another of swamps—as "geographical myths" (Essebo, 2019: 526) par excellence. These myths, I argue, can help us educate our vision in a way that makes us 'see' climate, re-creating the concept of *hora* or

phenomenological climate. I then turn to a later Platonic dialogue, *Philebus*, in order to develop an ontological account of said phenomenological climate.

4.4.2 “It’s a strange image you’re describing, and strange prisoners”

Of all the myths Socrates recounts in Plato’s dialogues, the so-called “allegory of the cave” demonstrates the “narrowness of our vision” (Dixsaut, 2012: 46) most clearly. As Dixsaut (2012: 42) notes, this “myth is meant to persuade us to turn our heads around, to get up and leave.”

Of course, the myth does not literally ask us to get up, leave, and go somewhere else. Rather, the myth distorts reality in such a way as to make us aware of how our everyday perception and experience is itself distorted in particular ways which generally go unnoticed. The myth can thus serve as a particular critique of ocularcentrism (Jay, 1988; Stonehill, 1995; for accounts and critiques of ocularcentrism in geography, see also Bissell, 2009; Cosgrove, 2003; Nash, 1996; Roberts, 2013; Tuan, 1979): the allegory of the cave inquires critically into our over-reliance on our sense of sight, into the apparent self-evident nature of vision and its objects.

The cave, as Socrates describes it in the dialogue, is home to cave-dwellers, shackled in such a way that they can neither move nor turn their heads (Plato, *Politeia*, VII, 514a-517d). Instead, they are forced to look at one wall of the cave in front of them, where all they see are shadows, projected onto the wall by a fire behind them, in front of which different objects are carried. Outside this cave, in broad daylight, lies true reality.

The story Socrates goes on to tell about this cave is a story of the dialectic between light and dark, brightness and shadows which characterises both knowledge and understanding. The cave-dwellers reliance on vision, however, makes this dialectic a painful one. As soon as those imprisoned are able to look toward the light, their shackles loosened, they are “pained and dazzled and unable to see the things whose shadows [they’d] seen before.” (Plato, *Politeia*, VII, 515c) Outside of their experiential comfort-zone, their experience turns utterly alien. Instead of proverbially ‘seeing the light’, they “turn around and flee towards the things [they are] able to see” (Plato, *Politeia*, VII, 515e), namely shadows.

What is required to understand the set-up of the cave, the relationship between objects and their representations, Socrates explains, is some time for *adjustment* (Plato, *Politeia*, VII, 516a). Adaptation, the visual physiological process by which our eyes adjust to lighting, here stands in for the epistemological dialectic between light and shadow.

What becomes known through this process of adjustment or adaptation is, I argue, not some new object of perception which is now visible “in broad daylight” (although such objects play a role in the allegory). Rather, what becomes known is the *process* by which our perception of objects is *mediated*; we become aware of the (material and conceptual) space *between* us and the objects we see. This ‘space of illumination’ itself cannot be seen, but is rather that through which we see, which affords visibility itself (see also Lingis, 1968: xlii).

This space takes on different shapes in the allegory of the cave, which are addressed as the cave-dweller adjusts to the light outside, having left the cave at the apex of their epistemological journey. To adjust to the true light outside, the cave-dweller must transition between different media of illumination with their corresponding degrees of clarity.

At first, he’d see shadows most easily, then images of men and other things *in water*, then the things themselves. Of these, he’d be able to study the things *in the sky* and the sky itself more easily at night, looking at the light of the stars and the moon, than during the day, looking at the sun and the light of the sun. [...] Finally, I suppose, he’d be able to see the sun, not images of it in water or some alien place, but *the sun itself*, in its own place, and be able to study it. (Plato, *Politeia*, VII, 516a-b, emphasis MH)

What spurs on the transition from shadows, to water, to sky is the realisation that the perception of different objects is mediated and hence, in Socrates’ reasoning, distorted. Being able to see the sun unmediated is the final step in escaping distorted perception, which began with the chains shackling the cave-dwellers in place. Having completed the process of adjustment/adaptation, the cave-dweller

would infer and conclude that the sun provides the seasons and the years, governs everything in the visible world, and is in some way the cause of all the things that he used to see. (Plato, *Politeia*, VII, 516b-c)

For the task of understanding experiences of climate and its changes, I suggest stopping one step short of completing the allegory as laid out by Plato. Instead of turning to the sun, the celestial source of light, I focus instead on the media of illumination traversed in this myth. The composition of the myth itself allows us to look at the conclusion Socrates reaches from an oblique angle: even if we were able to see the sun itself, we would still be looking *through* the sky as a medium. As I argued above, adjustment to and understanding of such media is prerequisite for understanding the epistemological situation Plato describes at all; else, the sun would simply pain and dazzle us. As Socrates explains in the *Phaedo*, this analogy is also at

play at the conceptual level.

[W]hen I had wearied of investigating things, I thought that I must be careful to avoid the experience of those who watch an eclipse of the sun, for some of them ruin their eyes unless they watch its reflection in water or some such material. A similar thought crossed my mind, and I feared that my soul would be altogether blinded if I looked at things with my eyes and tried to grasp them with each of my senses. So I thought I must take refuge in discussions and investigate the truth of things by means of words. However, perhaps this analogy is inadequate, for I certainly do not admit that one who investigates things by means of words is dealing with images any more than one who looks at facts. (Plato, *Phaedo*, 99d-e; on the relation between concept and experience in Socrates' reasoning, see also Engelland, 2020: 152).

The allegory concludes with the passage of time, with the sun providing the seasons and years. Herein lies a key difference between *klima* and *hora*: whereas climate in the former sense denotes the *spatial* distribution of climatic zones across the earth's surface (according to its inclination), climate in the later sense denotes the *temporal* cycle of the characteristic weather of a given place. The phenomenological climate-concept *hora* I am re-creating does not refer to the individual seasons, but to seasonality itself: the distinct shapes weather can take. Seasonality, the characteristic shape of weather, is not experienced as an object of perception: it is the medium governing "everything in the visible world" (Plato, *Politeia*, VII, 516b-c). It is to this end that I introduced the allegory of the cave above: to make this process of mediation visible, to look at it from an oblique angle.

4.4.3 "At the edge of the air"

Plato gives an account of the role of seasons as media of experience and knowledge in a geographical myth Socrates recounts in *Phaedo*; what one might call Plato's "allegory of the swamp" (on the similarities between the allegory of the cave and Socrates' account in *Phaedo*, see also Friedländer, 1954a: 262-263). This myth combines, as Friedländer notes, the "geophysical sublayer" with a "mythic-metaphysical top layer" (Friedländer, 1954a: 263, translation MH); in Socrates retelling, the physical and conceptual geographies of perception and experience become intertwined.¹⁵

¹⁵ Apart from elucidating the role of media of perception, the myth recounted in *Phaedo* develops a "geography of dying and coming-back-to-life" (Pender, 2012: 202). The myth offers the

At the end of *Phaedo*, Socrates gives a detailed description of “what [he is] convinced is the shape of the earth and what its regions are.” (Plato, *Phaedo*, 108e).

Further, the earth is very large, and we live around the sea in a small portion of it between Phasis and the pillars of Heracles, like ants or frogs around a swamp; many other peoples live in many such parts of it. Everywhere about the earth there are numerous hollows of many kinds and shapes and sizes into which the water and the mist and the air have gathered. The earth itself is pure and lies in the pure sky where the stars are situated, which the majority of those who discourse on these subjects call the ether. The water and mist and air are the sediment of the ether and they always flow into the hollows of the earth. We, who dwell in the hollows of it, are unaware of this and we think that we live above, on the surface of the earth. It is as if someone who lived deep down in the middle of the ocean thought he was living on its surface. Seeing the sun and the other heavenly bodies through the water, he would think the sea to be the sky; because he is slow and weak, he has never reached the surface of the sea or risen with his head above the water or come out of the sea to our region here, nor seen how much purer and more beautiful it is than his own region, nor has he ever heard of it from anyone who has seen it.

Our experience is the same: living in a certain hollow of the earth, we believe that we live upon its surface; the air we call the heavens, as if the stars made their way through it; this too is the same: because of our weakness and slowness we are not able to make our way to the upper limit of the air; if anyone got to this upper limit, if anyone came to it or reached it on wings and his head rose above it, then just as fish on rising from the sea see things in our region, he would see things there and, if his nature could endure to contemplate them, he would know that there is the true heaven, the true light and the true earth, for the earth here, these stones and the whole region, are spoiled and eaten away, just as things in the sea are by the salt water. [...]

There are many other living creatures upon the earth, and also men, some living inland, others at the edge of the air, as we live on the edge of the sea, others again live on islands surrounded by air close to the mainland. In a word, what water and the sea are to us, the air is to them and the ether is to them what the air is to us. The climate [*horas/ῥαῖς*] is such that they are without disease, and they live much longer than people do here; their eyesight, hearing and intelligence and all such are as superior to ours as air is superior to water and ether to air in purity; [...] they see the sun and moon and stars as they are, and

“topographical basis” for Plato’s “image of the afterlife” (Friedländer, 1954a: 266).

in other ways their happiness is in accord with this. (Plato, *Phaedo*, 109a-111c)

Socrates' account of the earth's cavities filled with media of different density (salt water, swamp air, ether) offers an alternate telling of the allegory of the cave where the media of experience are foregrounded; the perspective shifting further.

Once more, the deeper one finds oneself, the more distorted one's perception is. Analogising life under water with life above ground powerfully highlights the inconspicuous nature of media of experience; we do not generally notice the media in which we dwell. As Fleming and Jankovic (2011: 4) note, although the "noosphere", the "layer of air within two meters of the ground", is "[d]eeply significant for all human transactions, this layer remains out of sight, its very proximity rendering it invisible." (On the inconspicuousness of air, see also Horn, 2018; Connor, 2010) The ocean then functions as an "anti-apparatus" or "anti-environment" through which our own environmental media turn conspicuous (McLuhan and Fiore, 1968: 175; Peters, 2015: 55; Jue, 2020: 90).

Although the sun (and the moon and the stars) once more play a part in this account, Socrates places greater emphasis on the medium which allows one to see the sun instead of distorting experience: ether, the "purer element" (Friedländer, 1954b: 269, translation MH). From this (for us) impossible vantage point, Socrates looks back at us swamp dwellers from a celestial "amphibious perspective" (Jue, 2020: 5) as we do at the fish, dwelling at the *edge of the air* instead of the edge of the sea.

Reemphasising the allegorical nature of this account of earth, dwelling at the edge of the air is not so much a literal vantage point we could assume, but an epistemological one; this "vantage point is a place that is not of this world, and not of any world" (Dixsaut, 2012: 41).

Thinking from the edge of the air, we reflect on the media through which we experience, much in the same way as looking into water literally allows us to see a different medium. As we cannot break through the air's surface, in Socrates' model, we are unable to look down or sideways at our media of experience (on seeing earth and climate from outer space, see also Russill, 2017).

Instead, bringing to light the nature of media of experience requires us to "see differently", as the myth Socrates recounts instructs us to do. The distortion of different media of experience, detailed in the myth, then translates into a distortion of our own experiential reality, whereby the inconspicuous medium of experience turns conspicuous.

The medium that turns conspicuous in this swamp myth is the *climate (hora)*. The different climates Socrates identifies are not experienced as objects of perception, but through

differences in health, in “eyesight, hearing and intelligence” (Plato, *Phaedo*, 111b). Media of experience here do not turn conspicuous by leaving one medium in favour of another, as in the allegory of the cave, but by reflecting on how experience is shaped by media.

Climate, I argue, is not something we can look *at* but is more akin to a *medium* of experience. Climate is that *in which* we experience and which consequently shapes experience. To look at climate one would have to look at it from the edge of the air. From the vantage point of everyday life, however, climate is everywhere. To say that climate is invisible or nowhere would be akin to saying, in Socrates’ model, that the water fish swim in is invisible and nowhere. To ‘see’ climate, one must become aware of the (material and conceptual) space *between* us and the objects we see.

What appears to interest Plato with respect to climate, as I detail in the next section, is the order it brings to the potential chaos of weather. The myth recounted in *Phaedo* highlights that Plato does not appear to be interested in how *individual* seasons shape our experience through their changes, but rather how the *totality* of seasons, seasonality itself changes with varying climates.

The work the different seasons do, as Socrates explains in his etymological account of *horai* in Plato’s dialogue *Cratylus*, is to “distinguish or mark off one thing from another” (Plato, *Cratylus*, 410c). Seasons “distinguish (*horizein*) the weathers of winter and summer, the winds, and the fruits of the earth.” (Plato, *Cratylus*, 410c) Taken as a whole, climate is a distinctive weather shaped by a particular seasonality. Climates take shape in time but change through space.

4.4.4 Making climate legible

Such a view of climate, as something which mediates potentially unbounded weather into something regular and ordered takes me deeper in Plato’s broader ontological project. To account for climate, I here focus on Plato’s dialogue *Philebus*.

The *Philebus* centres around the question of which life is truly good: living for pleasure or living for knowledge. To sort this question, Socrates reflects on how pleasure can at once be *multiple*, i.e. many different things are pleasurable in different ways, and *one*, i.e. pleasure somehow encompasses this heterogeneity. This leads Socrates to wonder:

It is this principle that has turned up here, which somehow has an amazing nature. For that *the many are one and the one many* are amazing statements, and can easily be

disputed, whichever side of the two one may want to defend. (Plato, *Philebus*, 14c, emphasis MH)

Socrates goes on to identify a danger that results from the apparent polarity between one and many.

By making the point that it is *through discourse* that the same thing flits around, becoming one and many in all sorts of ways, in whatever it may be that is said at any time, both long ago and now. And this will never come to an end, nor has it just begun, but it seems to me that this is an “immortal and ageless” condition that comes to us with discourse. (Plato, *Philebus*, 15d, emphasis MH)

Socrates here recounts the basic fact that the very act of trying to distinguish things from one another through language (or discourse) leads to perpetual argument over which things are to be called by the same name (are one) and which things are distinct from each other (are many) (see also Hartshorne’s critique of areal realism in Section 3.2). The temptation of language to either draw together or differentiate leads one, according to Socrates, to “omit the intermediates” (Plato, *Philebus*, 17a); what is one *and* many.

Using the example of language (and a myth about the Ancient Egyptian deity Theuth), Socrates shows how literacy is equivalent to successfully identifying said intermediates (Plato, *Philebus*, 17b). On a basic phonetic level, being able to speak requires being able to identify and use vowels and consonants in a consistent manner, that is to identify a distinct number of sounds (the many) from the unlimited possibility of sound we can vocalise (the one) through which language becomes comprehensible (Plato, *Philebus*, 18b-d). Similarly, Socrates argues, a knowledge of music requires identifying distinct harmonies which give a musical piece its shape or “meaning” (Plato, *Philebus*, 17d-e). Intermediates—vowels, consonants and harmonies—result from limiting the unlimited or, as Socrates goes on to argue, from mixing the limited and unlimited (Plato, *Philebus*, 23c-e).

Socrates next example of the unlimited is *temperature*, or “the hotter and the colder” (Plato, *Philebus*, 24a). According to Socrates, temperature would simply vanish were it to assume a “definite quality” (Plato, *Philebus*, 24c); be limited. Experientially, this is borne out whenever we measure temperature. There is an unbridgeable gap between the temperature we experience in distinctive vagueness and the definite number on a thermometer. Just as the phonetics of a language or the harmonics of music result from limiting the unlimited in distinct ways, so too, Socrates explains, limit (or the limiting) taking away the “excesses and unlimitedness” of “frost

and heat [...] establishes moderation and harmony” (Plato, *Philebus*, 24c). As a result of the mixing of the unlimited (temperature, humidity, etc.) with the limited we are “*blessed with seasons*” (Plato, *Philebus*, 26b, emphasis MH).

4.4.5 Articulating climate

Plato’s ontological account of how the limited and unlimited mix to give weather its distinctive shape provides the basis for a phenomenological account of climate and its changes. Conceptualising climate as the result of measurement or a computer-modelled object would mean limiting climate’s nature to a limited entity. Trying to grasp climate in the flux of weather in turn risks being overwhelmed by the unlimited nature of climate’s meteorological elements (temperature, humidity, etc.).

Looking at experiences of climate from an oblique angle means conceptualising climate as a mixture of the limited and unlimited, as *the seasonal shape weather takes*. The intermediates that result from this mixing are the individual seasons, just as vowels, consonants and harmonies result from mixing the limited and unlimited in the case of language and music. Taking this ontological analogy further, just as language describes the totality of combinations of vowels and consonants, so too does climate describe particular combinations of atmospheric properties. Just as one might anticipate the progression of a certain piece of music through an understanding of harmony, one can anticipate weather once one has become literate in the climate one finds oneself in, becoming attentive to “the cyclical style or mood of the weather” (Kirkman, 2007: 27). Following an account Figal gives of the intensity of certain phenomena, climate “is neither unproblematic unity nor chaotic multiplicity, neither definite structure nor ambiguous tangle.” (Figal, 2007: 672, translation MH) Rather, climate “is characterised in itself by a tension, by an intensity” (Figal, 2007: 672, translation MH, see also Goethe’s and Sauer’s use of form in Section 3.4).

Climate “as a normalising idea offers humans a certain sense of security; it allows them to ‘put weather in its place’ so to speak.” (Hulme, 2015: 177) But climate is more than an (abstract) idea; it has an ‘outside’ reality. It is through an understanding of climate that the topography, vegetation, weather, and human culture (housing, clothing, food, etc.) of a given area become (more easily) legible (see the opening pages of Maslin, 2013). Similar to both language and music, the individual elements of climate (temperature, precipitation, etc.) do not make sense in isolation; they acquire meaning through their interrelation and duration. To adapt to a given climate means to grasp the grammar of weather in much the same way that speaking

well requires us to learn the grammar of language (on a hermeneutics of climate, see also Livingstone, 2000).

Consequently, changes in climate are not simply experienced as a change in some physical property of the atmosphere or as isolated events. Changes in climate are akin to changes in the grammar of weather, and by extension the grammar of ways of life (on weather literacy and climate change, see also Fleischhut et al., 2020). Changes in climate mean changes to the comprehensibility of the world (see also du Plessis, 2020).

The alienation or solastalgia felt in the face of climate change is, viewed through the ontological account offered by Plato, akin to a nightmare where our closest friends and family speak in a language we no longer understand (on the (un-)narratibility of climate change, see also Bergthaller, 2017). Highlighting the nature of alienation when hearing a foreign language, Waldenfels explains that

Whoever hears someone speaking in a foreign language that they themselves do not speak, hears what they do not understand and at the same time notices that they do not understand it. Something reveals itself by eluding them. (Waldenfels, 1997: 9, translation MH).

Following Plato's account, experiences of climate are not only experiences of a stabilising force between nature and culture. In experiencing climate change, one both notices weather one does not understand and notices that one does not understand it. Climate change reveals itself as a phenomenon by new climates eluding immediate comprehension, as old climates (and their corresponding ways of life) turn ephemeral.

4.5 Aristotelian climates

Aristotle's writings—both what he wrote and what was merely attributed to him—reflect the tension identified earlier in Section 4.3.1 between 'celestial' and 'terrestrial' climates. As I mentioned there, Aristotle's work preceded the creation of the Ancient Greek concept *klima*; speaking instead of "habitable zones" (Aristotle, *Meteorologica*, 362b) in his *Meteorologica* (see Figure 22).

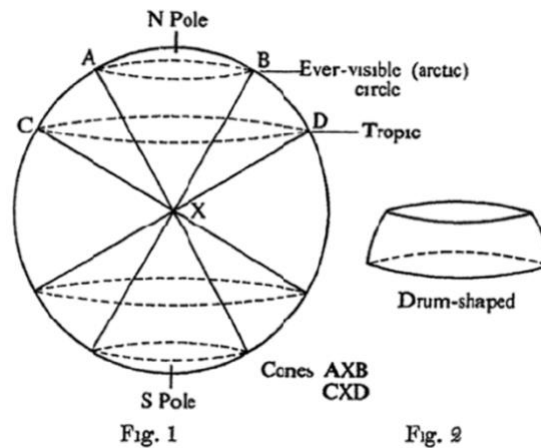


Figure 22: Aristotle's segments of the earth (Aristotle, 1952: 181). Used by permission. All rights reserved.

4.5.1 Climate: a question of mixture?

A more detailed account of what one might call climate can be found in the work *Problems*, attributed to Aristotle but more likely written by various authors (Aristotle, 2011: xvii). Book 14 of *Problems* deals with problems concerning *krasis* [κρᾶσις],

the basic meaning of which is 'mixing,' though it can also mean 'temperament' and 'climate.' This last is its primary meaning in the present book, the topic of which is the effects of climate (in some cases, on temperament). (Aristotle, 2011: 437)

The authors of the *Problems* go on to give an account of how the mixing—which Plato, in *Philebus*, identified to be taking place between different meteorological properties in the case of *hora*—encompasses both material *and* immaterial elements. Reflecting on the work the concept of *krasis* is tasked with, *krasis* highlights an ambiguity: The authors of Book 14 highlight how climate becomes entangled with, for instance, character (Chapters 1, 8, 15, and 16) and health (Chapters 2, 7, 9, and 10). This entanglement, in turn, is reflected in the fact that

krasis can be used interchangeably for climate and/or temperament. The Ancient Greek *eu-krasia* [εὐκρασία], for instance, may refer to both good temperature and good temperament (Liddell and Scott, 1940).¹⁶

Similar to Plato's account of *hora* in *Philebus*, the common element between temperament and climate that *krasis* captures is a process of *mixing* (Liddell and Scott, 1940). Being 'mixed' then appears to warrant the conflation of climate and character in the *Problems*, as well as in later crude climate determinism.

Although such crude determinism or "climate reductionism" (Hulme, 2011: 247) must be rejected, there is a degree of phenomenological truth to the observation that climates can shape how we think and feel, for instance in light of our preference for some climates over others, or in light of our grief around climate change beyond material changes to the atmosphere.

In his definition of climate, Humboldt ([1845] 1845: 323-324) was careful to emphasise that climate includes "all changes in the atmosphere [...], but also with reference to its influence on the feelings and mental condition of men." Horn (2018: 11) takes note of Herder's "pun on the Greek verb *klinein*": "The climate does not *force* but *inclines*". Climates do not determine, but effect a "cultural and anthropological disposition" (Horn, 2018: 11).

To understand how climate does this, or what climate change beyond the material might look like without drifting into crude determinism or 'climate reductionism', requires a more detailed phenomenology of climate and its changes.

4.5.2 The being of climate

In my concluding section on Plato, I argued that the *Philebus* offers a first ontological account of the nature of climate: a grammar of weather and corresponding ways of life that coheres our world in such a way that our experiences are comprehensible. Changes to this grammar then threaten changes to the very comprehensibility of one's existence.

On a conceptual level, Plato's ontological account offered a first example of what another *sort* of climate realism might look like, aside from—for instance—scientific and culturalist ontologies. Recalling my arguments from Chapter 2 and the introduction to this chapter, the reflection on alternate ontologies was occasioned by the inability to make sense of *experiences* of climate and its changes.

Having introduced different climate concepts (*krasis*, *hora*, *klima*) and the spectre of

¹⁶ Both temperature and temperament are etymologically related to the Latin *temperare* (mixing).

different ontologies, of different ways in which climate is real, the question arises how these different concepts and approaches relate to each other. Are they all about the same object, which I insinuate when I argue that they are ‘about climate’, albeit in different ways?

Aristotle shares a similar concern with regards to the word ‘being’ in his *Metaphysics*. After all, we say of many different things, such as rocks, plants, people, buildings, institutions or climate(s), that they *are*. “Being”, Aristotle writes, “is meant in more than one way, but pointing toward one meaning and some one nature rather than ambiguously [or homonymously].” (Aristotle [Sachs], *Metaphysics*, IV, Γ2, 1003b) Here, Aristotle sides with the position that all things that *are* share something in common, ‘being’, which is what ultimately warrants a philosophical investigation into the nature of this commonality: ontology. Being, Aristotle notes, is similar in this respect to *health*.

And just as every healthful thing points toward health, one thing by protecting it, another by producing it, another by being a sign of health, and another because it is receptive of it, and also what is medical points toward the medical art [...], so too is *being* meant in more than one way, but all of them pointing toward one source.” (Aristotle [Sachs], *Metaphysics*, IV, Γ2, 1003b)

The science of medicine is founded on this fact; that disparate things all seem to be connected to one and the same thing, *health*, in some way. The analogy Aristotle draws between being and health brings to light another instance of the relationship between the one and the many highlighted by Plato, the “structure of a multiplicity ruled by one single element” (Figal, 2019: 68-69), which will come to be of special importance in my later account of a phenomenology of climate in Chapter 5.

Climate too, ventriloquizing Aristotle, is meant in more than way, as hinted at above. Even just with respect to the scientific concept of climate, we speak of global and local climates (Sutton et al., 2015), of microclimates (Rosenberg et al., 1983) and indoor climates (Fountain et al., 1996), of climates as they are now and as they have and will have been or of climates on different planets (Kondratyev and Hunt, 1982). Veering into more metaphorical uses of climate, we speak of political and fiscal climates or of climates within organisations.

The variety of ways in which we talk about climates begs the question, again, what climate is. Are some of these ways of talking about climate somehow closer to what climate ‘truly’ is? Are some more literal, while others are more figurative? Following Aristotle’s mode of inquiry, we might ask if there is a *single element* which rules this climate multiplicity. Is climate “meant in more than one way, but pointing toward *one meaning* and some *one nature* rather than

ambiguously [or homonymously]” (Aristotle [Sachs], *Metaphysics*, IV, Γ2, 1003b, emphasis MH)?

Some of these questions can only be answered satisfactorily after I have developed my full phenomenological account in Chapter 5 and in my concluding statement on climate realism. Previewing my later arguments, I will now simply assert that the meaning of the scientific concept of climate must be traceable to a structure in the everyday life-world of experience. Although I do not go on to make this argument within the scope of this thesis, from a genealogical perspective, the meaning of ‘metaphorical’ climates is likely to emerge from the ordinary meaning of the climate ‘of nature’. To use a concept I introduce in Chapter 5, they are called climates in virtue of being correlational in nature too.

At this stage of my argument, Aristotle’s discussion of the nature of being is helpful in that it indicates the sort of insights phenomenology seeks to develop: they are not insights about the minute details of individual experiences, but insights into the general structure and nature of experience itself. After all, experience too “is meant [or said, MH] in more than one way, but pointing toward one meaning”.

4.5.3 Climate-at-work

In his account of Goethe’s ‘concept’, which I discuss in Section 3.4.1, Muenzer (2021: 38) highlights a conceptual kinship between Goethe’s concept of *form* and Aristotle’s concept of *energeia*; one of the ways in which ‘being is said’. Although *energeia* is often translated as “activity” or “actuality” (Aristotle, 2016: 586), I here follow another translation: *energeia* as “being-at-work” (Aristotle, 2002: xlvii) or “in-work-ness” (Figal, 2019: 87). I turn to Aristotle’s discussion of being as being-at-work because it offers further phenomenological detail to the experiential reality of climate.

4.5.3.1 energeia or being-at-work

Aristotle develops this concept in order to account for the reality (or being) of things which do not exist, or are not complete, as some finished *product*, but rather are “complete *as activity*” (Figal, 2019: 87). The clearest examples Aristotle offers are *vision* and *thought* (Aristotle [Sachs], *Metaphysics*, IX, Θ6, 1048b). These “are not practices devoted to the production of something, but rather are activities complete without an external result.” (Figal, 2019: 87) Seeing or thinking are not somehow ‘completed’ once we see or think *something*, but rather

are an ongoing process; they are complete as activity, they are being-at-work.

Against common intuition, however, Aristotle does not limit being-at-work to activities we *do*. Rather, the “term also or even mainly applies to every reality that is not the *reality of a product*, but rather *reality in process*.” (Figal, 2019: 87, emphasis MH)

One example of such a reality in process Aristotle turns to is the *house*. According to Aristotle, one misses something essential about the being of a house if one only turns to what a house is composed of; “stones, bricks, and lumber” (Aristotle [Sachs], *Metaphysics*, VIII, H2, 1043a). The material constituents of a house merely “describe the house in potency” (Aristotle [Sachs], *Metaphysics*, VIII, H2, 1043a). A visual representation of such a house might be the *Exploded House* photographed by Arnold Newman (see Figure 23).

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Figure 23: Lustron Factory - exploded house, 1949 (Arnold Newman).

Every shape in the intricate pattern of this carpet of components is equally visible. No hierarchy, formal or functional, governs the relations between the parts. Contiguity alone links wood, metal and glass; frames, planks and pipes. *This is nothing like a house, yet nothing but a house*. If the houses destined to be its neighbours had been laid out alongside, it would have been impossible to tell where one ended and the other began. (Burgin, 1993: 39)

An account of a house that would only include its materials or constituent parts would be “nothing like a house, yet nothing but a house.” What is missing in such an account of a house is, as Burgin (1993) notes, a *form* that gives shape to the material.

Somewhere halfway between a house-in-potency and a house-at-work, we may find Per Kirkeby’s brick sculptures (see Figure 24, see also Figal, 2019: 89), which give the building material a house-like shape, but miss one central aspect of a real house: *habitability*.



Figure 24: Bricksculpture without a title, 1990, by Per Kirkeby in Groningen-Zuid, the Netherlands.

Indeed, Aristotle notes that the being-at-work which distinguishes a house, which gives a house its ‘shape’, is “that it is a sheltering enclosure for possessions and living bodies” (Aristotle [Sachs], *Metaphysics*, VIII, H2, 1043a). Sheltering here is not the final *product* of a house, but an ongoing activity that a house *is*.

Aristotle goes on to identify further examples of being-at-work by giving definitions of two natural phenomena: “What is *windlessness*? Stillness in an expanse of air. What is *calm*? Levelness of the sea” (Aristotle [Sachs], *Metaphysics*, VIII, H2, 1043a, emphasis MH). Once again, windlessness (of the atmosphere) or calmness (of the ocean) cannot be explained by simply referring to their material constituents; they are, in Aristotle’s view, not the product of air or water, but rather a being-at-work which give air and water a distinctive, intelligible shape.

This approach to realism is the reversal of attempting to identify something by simply enumerating its constituent parts. What makes a house intelligible, both in the mind of the architect and in the experience of the inhabitant, is not a list of the materials the house is built out of. Rather, what makes a house intelligible is understanding its *being*, namely its being-at-work as habitability. This being of a house, a house’s habitability serves as a measure for us to

distinguish house-like structures from actual houses.

It is easier to see the primacy of being-at-work over the constituent material parts in things we have a hand in making or building, such as a house. After all, the process of making requires we first know *what* it is we are making before we consider *how* and *out of which* materials we fashion it.

Yet Aristotle asks us to apply this model of understanding to the natural world, too. Our atmosphere and oceans, referring back to Aristotle's examples above, are intelligible to us not because we have somehow added together their constituent material parts. Rather, what we understand when we understand the atmosphere and oceans around us are their distinct ways of being-at-work, giving shape to the world and our experience. Intelligibility, as Figal emphasises, takes place on the 'level' of being-at-work, and hence "has to be strictly distinguished from [somethings] material existence." (Figal, 2019: 91)

In contrast to the example of houses as being-at-work, the meaning of the ocean or the atmosphere as being-at-work is not only related to *human* experience. Although their being-at-work is only intelligible to *us* through experience, living and being in and with the shapes the ocean and atmosphere take constitutes a shared reality between the human and more-than-human.

4.5.3.2 *Where does being-at-work take place?*

Bringing to mind the struggle for areal realism detailed in Chapter 3, Aristotle's account of being-at-work has consequences for attempts to delineate 'objects' whose being is 'in-workness'. Where would one go to find them?

Starting with houses or buildings, we certainly can take someone to visit a particular building (for a more detailed phenomenological account of this example, see also Figal, 2016: Chapter 4). Yet what would we be pointing to? Aristotle's point is that in showing someone a building, we are not really pointing to some material object. Rather, we rely on the fact that we both intuitively grasp the nature/being of a building, its being-at-work as habitability. Without this (shared) understanding, it would be difficult to distinguish between a real house and a house-like structure (such as a Per Kirkeby sculpture). This becomes clear as soon as we enter a house or building. Within the spaces of a building, we might equally say that built space is *everywhere and nowhere*. In each and every room of the building, we encounter the building without ever being able to show or experience the built space in its entirety. Nonetheless, we clearly are experiencing the building in another way, as an instance of the being-at-work of a

‘house’ or habitability. From this perspective, the least reliable way to see or experience a building would be to simply point at it from the outside. A building is not truly shown to us, nor does it become intelligible through its material components or facade. Looking at a house from the outside merely gives us the illusion that we are somehow ‘looking sideways’ at our experience of a house; ‘from the edge of the house’ (I discuss the problem of ‘looking sideways’ at experience in Section 5.1.1.1).

Similarly, we may show someone instances of wind or the ocean. And yet, the wind or the ocean are not truly that *one* thing we would point out. The reality of wind or the ocean extends beyond any of these individual instances. The ocean “exceeds its liquid form.” (Peters and Steinberg, 2019: 295) The wind or the ocean are intelligible to us not because we have seen some object (or a series of objects), but because we have grasped the being-at-work that is the atmospheric or the oceanic (on knowing the ocean, see also Steinberg and Peters, 2015).

Of course, our grasp of a given being-at-work is fallible and incomplete. As Figal explains with respect to habitability, we may

immediately know what [habitability] means, but nevertheless find it difficult to explain in detail the possibilities of habitation provided by a house. Habitability is a possibility that can be realized in different ways, some of them possibly familiar, others vaguely known, and most of them not imaginable. It is for this reason that habitability cannot be exhaustively determined. Taken in its being-ness, a particular house will be an appearance defined by an intuitively graspable eidetic horizon of possibilities. Its actual state, including its structure, proportions, size, and position will indirectly offer the possibilities defined by this horizon to experience. [...] Since a house’s being-ness is inexhaustible by particular experience, a house appearing in its eidetic horizon will not be reducible to particular subjective ways of inhabiting it. (Figal, 2019: 123-124)

We may hence continually be surprised by possibilities of habitability, as well as by possibilities of the atmospheric or of the oceanic that we had not yet encountered. In such moments of surprise, one is not so much surprised that some object of experience turned out to be something other than what we had first thought. Rather, such experiences—including experiences of climate change (changing atmospheres and oceans)—lead to the *intensification* of the ‘in-work-ness’ of the given phenomena. Instead of experiencing a certain shape the atmosphere or ocean takes, one experiences the horizon of possibilities that characterise the underlying ontology of both.

Reflecting on such experiences, it becomes clear that there is a way for something to exist

that is other than the presence of a material or scientific object. That something is both nowhere and everywhere does not necessarily call into question its existence. Rather, it should challenge us to develop an account that can do justice to this apparent contradiction.

4.5.3.3 *Inhabiting climates*

To understand the experiential reality of climate and its changes, climate can be taken as an example of being-at-work too. Climates are not simple objects of experience or perception, they are not ‘products’. Rather, as media of experience, climates are ongoing activities. This ontological kinship between houses, oceans, and atmospheres once more explains why it is persuasive to speak of ocean and indoor climates.

Hence climates do not become intelligible by adding together their constituent parts. A climate exists as beings-at-work which gives shape to a particular medium of experience. To show someone a climate, one must not take them to some specific vantage-point from where it could be seen. Rather, climate’s experiential reality is best understood through the ways of being it affords within it. Even though we hence never ‘directly’ encounter climate in much the same way as we never ‘directly’ encounter a built space, we still have a grasp on the being-at-work of climate. This grasp becomes evident, for example, in our preference for certain climates, in the way memories are connected to a certain climate or in our concern for the local effects of climate change.

In common with other instances of being-at-work, as Hulme (2017: 1) writes, people “seem to know intuitively what climate is and yet they struggle to articulate an adequate definition of it.” Like the example of habitability in the previous section, one’s knowledge of climate “will remain open for exploration, explanation, and exemplification.” (Figal, 2019: 132)

Relating this point back to my conclusion in Section 4.4.5 concerning Plato’s ontology of climate, Figal compares this sort of knowledge to the knowledge of *grammatical structures*.

Usually such structures are performed in speaking and writing. However, they can also be made explicit, and thereby they become evident as possibilities of forming and performing meaningful sentences. (Figal, 2019: 144)

In his recasting of Aristotle’s ontology, Figal characterises the being of habitability as a *promise*, “it is truth to be complemented by provisional truths – truth as an open potential that becomes explicit in particular possibilities.” (Figal, 2019: 132)

Pointing back to the broader question ‘where climate is’, this characterisation of the

ontological nature of climate explains why there “is no single true and eternal definition of climate to be discovered or defended.” (Hulme, 2017: 16) Climate is not the ‘sort of thing’ which could be comprehensively accounted for by giving a list of properties, of constituent elements or by pointing to something. Rather, a climate is the ‘sort of thing’ which is a particular possibility of a deeper potential, something-at-work; a point I will explain in detail in Chapter 5.

4.6 (De-)Territorializing weather and climate

Through a phenomenological reading of parts of Plato's and Aristotle's work, I have provided a first account of the experiential reality of climate and its changes. By way of transitioning to my phenomenological account of climate and its changes I develop on the basis of phenomenological theory proper, I now briefly position my work in relation to present phenomenological engagements with weather. In doing so, I highlight the novel contribution my account promises to make.

4.6.1 Ingold's phenomenology of weather

Ingold has offered perhaps the most systematic account of how weather is experienced phenomenologically in his work on weather-worlds; another example of concept-creation (Ingold, 2005; Ingold, 2007; Ingold, 2010; to recognise Ingold's broader influence, see also Vannini et al., 2012; Colapietro, 2015; Barry et al., 2020; de Vet and Head, 2020).

In his discussion of the "visual perception of the weather", Ingold highlights two key difficulties in accounting for how we feel the weather: (i) experiences of weather are "invariably multisensory" and (ii) there is no "thing" called weather we can point to; "weather is not really an object of perception at all." (Ingold, 2005: 97) Hence *locating* weather turns out to be a key difficulty, both concerning how weather is given in experience and what the object of weather-experience even is. This becomes evident in the very grammar we use to describe the weather (Ford, 2017; François, 2008).

To locate weather in experience, Ingold considers the differences in perceptions of landscape and weather. Landscape, according to Ingold (2005: 102), is perceived through surfaces; we see, hear, and touch 'things' (for a critique of Ingold's account of landscape as object of observation, see also Wylie, 2006). Weather, conversely, is experienced as a *medium* of experience: we do not experience 'objects' of weather, but light, sound, and feeling themselves as we are weathered (Ingold, 2005: 102). This leads Ingold (2005: 102) to conclude that perceiving landscape is a "mode of observation", whereas "perceiving the weather is a mode of being."

To experience weather, then, means to experience the very capacities through which we experience ourselves: Changes in weather (in sunshine, rain, wind, etc.) underwrite "our capacities respectively – to see [sunshine], hear [rain], and touch [wind]." (Ingold, 2007: S30) As

weather changes we do not see different things, but we do see the same things differently. [...] Strictly speaking, the weather is not what we have a perception of; it is rather what we perceive in. For if weather is an experience of light, then to see in the light is to see in the weather. It is not so much an object as a medium of perception. (Ingold, 2005: 102)

4.6.2 Weather, season or climate?

Given Ingold's phenomenological approach to weather, which results in an account of weather as a medium of experience, one might expect he shares a similar phenomenological approach to climate as the one I outlined above. Turning to his work, co-authored with Kurttila, on "perceiving the environment in Finnish Lapland" reveals something different and, perhaps, surprising:

We were particularly concerned whether, or in what respects, the environment is perceived to have changed—at least within living memory—and whether these changes could be linked to wider processes of climatic change as "scientifically" monitored and recorded by meteorological stations in the region. [...] Our efforts, however, were frustrated by the realization, in the course of carrying out the project, that environmental scientists and local Sami people were talking about quite different things. In a nutshell, whereas the scientists were out to detect changes in *climate*, what mattered to local people were changes in *weather*. Climate is an abstraction compounded from a number of variables (temperature, precipitation, air pressure, windspeed, etc.) that are isolated for purposes of measurement. Weather, by contrast, is about what it feels like to be warm or cold, drenched in rain, caught in a storm and so on. In short, climate is recorded, weather experienced. (Ingold and Kurttila, 2000: 187)

Unpacking this explanation of the differences between weather and climate, Ingold and Kurttila reassert what Horn has called the "externalization of climate" (Horn, 2018: 15). If climate is defined as "an abstraction compounded from a number of variables", then it is clear why climate—so defined—might not have mattered to the local people.

This definition of climate, along with the very distinction between weather and climate, becomes more difficult to uphold with the onset of rapid anthropogenic climate change. Voicing concern about weather due to climate change does not mean being concerned about sudden changes in the weather we momentarily experience. Such changes belong to the very nature of weather. Of concern are changes in the very *character* of the weather of a given place, weather being out-of-sync with what one has come to expect, namely "seasonal normality"

(Ingold and Kurttila, 2000: 187). With regards to seasons, Ingold and Kurttila go on to explain that

Crucial to people's experiences of the weather in the far north is the cycle of the seasons. As a phenomenon of climate, seasonality may be registered in the form of regular annual fluctuations in temperature, precipitation and daylight hours, without regard to the lives of plants, animals or human beings. But as a phenomenon of weather, seasonality inheres in the relations between concurrent rhythms of growth and movement of plants and animals, and of human social life. [...] [S]easonal variations are experienced as the interweaving, in a complex counterpoint, of changing harmonies of light, darkness and colour, of freezing and thawing, of cycles of life and death, of the migratory movements of birds and of human activities of production [...] and consumption [...]. It is consistent with this understanding of seasonality as a system of rhythmic interrelationships that in recounting their more memorable experiences of the weather, people tend to focus on rhythmic dislocations and the anomalous conjunctions that ensued. (Ingold and Kurttila, 2000: 190)

The concept of phenomenological climate developed above calls into question the dichotomy between seasonality as a “phenomenon of climate” and a “phenomenon of weather”.

The difference between climate and weather cannot come down to one being measured and the other experienced. From the scientist's point of view, both weather and climate can become objects of measurement and externalization. As Ingold's account of weather-worlds shows, a quantitative approach to weather would occlude weather's nature as a medium of experience. Equally, a quantitative approach to climate—measuring, recording, modelling climate—would occlude climate's phenomenological reality; something Humboldt reminds us of in his definition of climate as something “which sensibly affect[s] our organs” (Humboldt, [1845] 1845: 323-324; Schneider, 2018).

To better make sense of the different phenomenologies of weather and climate, I turn to Horn's account of “heterodox forms of [climate] knowledge” and distinguish between weather and climate on the (phenomenological) grounds that one is a “daily singularity”, whereas the other is a “temporal cycle” (Horn, 2018: 17-18). Although both weather and climate are, according to Ingold and Horn respectively, media of experience, they take place on different temporal scales (on temporality and environmental change, see also the special issue accompanying Edensor et al., 2020; Edensor, 2010). As I argued through-out this chapter, climate coheres weather in distinctive shapes. Experiencing climate means experiencing the

“system of rhythmic interrelationships” of a given place. It is for this reason that we do not mistake a change in weather (the sudden onset of rain) for a change in climate (leaving one climate for another).

Changes in climate, such as when we move to another place, entail changes to whole ways of life that changes in weather do not. In Horn’s words, climate “involves a *territorializing* principle of place, of environment, of a culture’s situatedness in nature and nature’s gentle force within culture, a sense of seasonal cycles, of repetition and stability.” (Horn, 2018: 13, emphasis MH; on the question of climate (in-)determinism, see also Horn, 2018: 11-12; Hulme, 2011; Livingstone, 2011) Weather, on the other hand, “refers to a *detrterritorializing* principle of planetary dynamics and forces, of unsteadiness and singularity.” (Horn, 2018: 13, emphasis MH).

The difference between detrterritorializing and territorializing aspects of atmospheric processes bears out in research on the cyclical, seasonal, and temporal coherence of landscapes, on how landscapes change and hold new meaning with time (Ingold, 1993; Palang et al., 2005).

Brassley (1998: 120) introduces the concept of “ephemeral landscapes” to describe non-permanent changes, and highlights weather as one example of natural “landscape ephemera”. Brassley (1998: 121) goes on to further distinguish between “*anticipated* ephemera”, such as seasonal changes in weather, and “*unanticipated* ephemeral change, produced by short-term variations in the weather.” One phenomenological cue Brassley (1998: 121) highlights to distinguish between both is how unanticipated ephemera arrest our attention in a way cyclical seasonal changes do not.

Responding to Brassley, Jones (2007) argues that seasonal landscapes are not ephemeral at all. Jones (2007: 19) traces the etymology of seasons back to the Latin word for sowing [*satio*] and highlights how “[a]gricultural seasons are closely tied to the seasonal rhythms of the climate”. Introducing a different typology, Jones (2007: 21) suggests we differentiate between *ephemeral* landscapes, with their irregular weather, and *seasonal* landscapes characterised by rhythm. Once more, weather’s ephemerality detrterritorialises, climate’s seasonality territorialises.

Climate change, however, refigures this dichotomy: In climate change the very ‘system of rhythmic interrelationships’, on which any understanding of weather and seasons as ‘usual’ or ‘unusual’ depends, becomes undone. In climate change one inhabits, in Malm’s (2018: 15) words, “the diachronic, the discordant, the inchoate” because with a change in climate, the very medium of experience changes: the ways one has come to live in a given climate stop making sense. To experience climate change means to experience “temporal dissonance [...] defined

by struggles and negotiations that derive from new or uncertain answers to the two basic questions that mark anticipatory culture (What is next? Now what?)” (Baker, 2021: 84).

To be experiencing this is something different, I argue with Plato and Aristotle, than to experience a change in weather. It is important to be able to make this difference legible to understand what is changing with climate change. Returning to the debate between Brassley and Jones, climate change undoes the difference between the ephemeral and seasonal. As an ephemeral change, extreme weather arrests our attention, signalling lasting climatological change and shredding the conceptual fabric through which (concrete) weather and (abstract) climate are kept apart (Jasanoff, 2010: 237; Neimanis and Hamilton, 2018; Simonetti, 2019: 243). Old climates, to which one had adapted, turn ephemeral as new climates begin to re-territorialize ways of life.

In light of anthropogenic climate change, the concept of climate does not become obsolete. Instead, as I showed through applying Plato’s and Aristotle’s thought to the ontology of climate, experiences of climate *intensify* as climates change. Climate’s territorialising power no longer fades into the background of centuries of adaptation but is acutely felt as one is forced to make sense of new weather and corresponding ways of life. This experience is, evidently, asynchronous; it is not a single moment in time shared globally. The temporality of climate change is, as Whyte shows, embedded in a deeper historical context, namely colonialism (Whyte, 2017; Sultana, 2022). Experiences of climate change extend further back in time than the current moment of awareness of climate crisis, accompanied by “a chronos of self-actualization.” (Neimanis and Walker, 2014: 567) To help make sense of these different experiences, climate must not only be understood scientifically and culturally, but—I argue—phenomenologically.

5 Phenomenological climate

The goal of the previous chapters was to draw the conceptual problem of experiences of climate and its changes out into the open. Both Chapter 3 and 4 prepare a more focused phenomenological study of climate and its changes by unearthing precedents for a phenomenological approach in the history of geography and Ancient Greek philosophy.

In this final chapter, I turn to phenomenological theory itself. To position my own phenomenological approach to climate and its changes within geography, the chapter begins by retracing geography's previous engagements with phenomenology. Through highlighting the limits of previous approaches, I present my phenomenology of climate both as a contribution to understanding the nature of climate and its changes, and as a novel way of doing phenomenology in geography. I conclude by showing how phenomenology can help us understand what changes with climate change.

5.1 Geography's genealogies of phenomenology

5.1.1 Assessing a messy situation

The relationship between phenomenology and geography is, in a word, messy (for a succinct overview, see also Kinkaid and Hepach, forthcoming). It would be wrong, however, to make geographers alone responsible for the state of phenomenological scholarship in human geography, as some have done (Billinge, 1977; Pickles, 1985). Instead, the messiness of phenomenology in geography reflects a messiness in phenomenological theory itself. Phenomenology has developed, in principle, through the continuous revision of Husserl's ([1900/1901] 2001a; [1900/1901] 2001b) foundational project. Philosophical developments beyond phenomenology of import to geographic theory, such as post-structuralism, have developed on the basis of a close but critical reading of Husserlian phenomenology, too (Derrida, [1967] 1973).

Making categorical statements about the nature of phenomenology is then similarly difficult to making categorical statements about geography as a discipline; a fact which quickly becomes apparent as geographers first try to define phenomenology (Relph, 1970; Relph, 1977).

As the first section of this chapter will discuss, geographers recognised this problem as soon as phenomenology entered into geography. Buttimer (1977), Billinge (1977), and Pickles (1985) were particularly attentive to the shallow way in which geographers first engaged with phenomenology, namely the work of Husserl and Heidegger. More recent engagements with phenomenology in geography by post-phenomenologists (Wylie, 2006; Ash and Simpson, 2016; McCormack, 2017), cultural geographers interested in 'new' phenomenology (Anderson, 2009; Gandy, 2017), critical phenomenologists (Simonsen, 2007; Kinkaid, 2020), and others (Seamon, 2018; Hannah, 2019) go deeper and are more sustained. Instead of taking phenomenology to be the study of subjective experience alone, they tackle the conceptual problems relating to intentionality and develop solutions which speak to both the problems of geography and phenomenology.

Both past and present engagements with phenomenology in geography, however, do not reflect the multiplicity of *different* and sometimes contradictory readings or interpretations of individual phenomenologists and their respective theories very well (notable exceptions include Gandy, 2017; Hannah, 2019). This is a particular problem with respect to phenomenology, given that the development of phenomenology is itself based on the careful

(re-)reading and interpretation of previous phenomenologists and their concepts.

Where early phenomenological scholarship in geography might have rendered phenomenology as a whole to be the study of subjective experience and ‘meaning-making’, more recent scholarship continues to render individual phenomenologists, such as Husserl, as subjectivist or idealist—which *some* phenomenologists might agree with—, without engaging with the complexity of his work directly. With regard to Husserl, for instance, post-phenomenologists appear follow an internalist, Fregean or ‘West Coast’ reading of Husserlian phenomenology, whereby the object of experience is part of consciousness (Føllesdal, 1969; Dreyfus, 1982; Smith and McIntyre, 1982; Dreyfus, 1993), as opposed to an externalist or ‘East Coast’ reading (Sokolowski, 1984; Drummond, 1990; Zahavi, 2017), whereby the object of experience is independent of consciousness (for an excellent overview of this debate, see also Zahavi, 2004; Nikolic, 2016).

Without making it explicit, dominant renderings of phenomenology in geography then perpetuate a certain interpretation of phenomenology and its development, based in no small part on secondary literature and the work of phenomenology’s major critics, such as Deleuze or, more recently, speculative realists, new materialists, and object-oriented ontologists. When geographers then do return to the primary texts of phenomenological theory, such as the late work of Merleau-Ponty through the lens of phenomenology’s critics, they find it difficult to pinpoint what exactly phenomenology ‘got wrong’ (Wylie, 2006: 527). This geographical ambivalence towards the validity of phenomenological theory is particularly evident in post-phenomenology.

As Ash and Simpson (2016: 56), for instance, note, the “post-phenomenological line can be seen throughout the history of phenomenology after Husserl”. Rose and Wylie (2011), on the other hand, critique “the central place accorded to the perceiving subject” in Heidegger’s and Merleau-Ponty’s work, i.e. in the history of phenomenology after Husserl.

To explain the ambivalence toward phenomenological theory and post-phenomenology’s sustained engagement with recent phenomenological work, such as by Sara Ahmed, Michel Henry, Don Ihde, Emmanuel Lévinas, Alphonso Lingis, Jean-Luc Marion, and Jean-Luc Nancy (Harrison, 2008; Anderson and Wylie, 2009; Ash and Simpson, 2016), Ash and Simpson (2016: 63) are careful to point out that

post-phenomenology is not about abandoning the key insights of phenomenology. Instead it is about refiguring and expanding phenomenology’s analytic and conceptual boundaries. It is about exploring what Quentin Meillassoux (2009) terms ‘the great

outdoors’—an excessive world that lies outside of the human–environment correlate but which is central to shaping human capacities, relations and experiences.

As the final sentence makes evident, post-phenomenology revisits past phenomenology not on its own terms, but through the lens of one of its principal critics (Meillassoux, [2006] 2008), whose reading of phenomenology has been heavily criticised within contemporary phenomenological scholarship (Figal, 2016; Golumbia, 2016; Zahavi, 2016; Wiltsche, 2017). It is then unsurprising that post-phenomenology in geography is said to question the very phenomenological concepts Meillassoux and speculative realists/object-oriented ontologists more broadly target: intentionality and correlationism (for a more nuanced post-phenomenological approach to the problem of correlationism, see McCormack, 2017).

Critiquing phenomenology through the lens of speculative realism and object-oriented ontology is, of course, legitimate. As Ash and Simpson (2016: 55) go on to show, various phenomenologists themselves have criticised both intentionality and correlationism (for instance Henry, [1990] 2008). However, these remain distinct interpretations of phenomenology and its fundamental concepts.

What I take issue with is not that phenomenology is subject to critique in geography, but that geography’s understanding of phenomenology is narrowed to particular readings of phenomenological theory. This becomes particularly evident in geography’s interpretation of intentionality, correlationism, and Husserlian phenomenology.

Raising these questions is not only a matter of “phenomenological purism” (Rehorick, 1991: 360), i.e. a question of ‘getting phenomenology right’. As Section 5.3 of this chapter will argue, Husserlian phenomenology and the concepts of intentionality and the phenomenological correlation can help identify the experiential reality of climate and its changes. Moving ‘beyond intentionality’ would mean to forgo phenomenology’s potential to help explain correlational phenomena such as climate and spatiality more broadly (Figal, 2016).

To expand geography’s understanding of phenomenology and to highlight phenomenology’s unrealised potential for future geographical research, I will develop, in this chapter, an alternative account of (Husserlian) phenomenology, following recent work in phenomenology by Figal (2009; 2016; 2018; 2021) and Zahavi (2003; 2004; 2017; 2018).

5.1.1.1 Defining intentionality

To highlight the difference between my understanding of intentionality and the phenomenological correlation from the interpretation dominant in past and present geography,

which I will lay out in the following sections, let me begin by briefly defining both concepts with the help of Zahavi and Figal.

Intentionality is a central concept for phenomenology because it describes, on a foundational level, the structure of consciousness. As Zahavi (2018: 16) explains, our conscious life is not a mere unstructured “amalgam of more or less intense internal sensations and feeling states”. Rather, consciousness—seeing, hearing, remembering, imagining, thinking, hating etc.—“is about something.” (Zahavi, 2018: 16) Consciousness hence “has a directness to it, it is a consciousness of something, it is characterised by intentionality.” (Zahavi, 2018: 16)

As the different ways of being conscious mentioned above show, consciousness “is not concerned or preoccupied with itself, but it is, rather, by nature self-transcending.” (Zahavi, 2018: 16) By virtue of being about something, consciousness is always beyond itself. Zahavi (2018: 16) summarises that for “the phenomenologist, ‘intentionality’ is the generic term for this pointing-beyond-itself proper to consciousness.”

One might now assume that, because phenomenology is concerned with intentionality (the directness of consciousness), phenomenologists deal with subjective experience alone, with what is going on ‘in our heads’. But this would be a substantial (yet common and prominent) misunderstanding of phenomenology. Zahavi (2018: 20) explains that phenomenologists reject the view that “experiences are in and of themselves subjective happenings with no immediate bearing on the world outside.” Because consciousness is defined by its “intentional openness” and “world-relatedness” (Zahavi, 2018: 24), it would be “misleading to regard the world as somehow outside or external to us” (Zahavi, 2018: 23).

Hence, for the phenomenologist, the subjective and objective cannot be disentangled; they are “systematically interrelated” (Zahavi, 2018: 17) in intentionality. Given this entanglement, the study of intentionality is not only necessary in order to understand the nature of consciousness and ‘subjectivity’, but also in order to “pave the way of a proper understanding of reality and objectivity.” (Zahavi, 2018: 27) The very distinction between epistemology (the study of how we know) and ontology (the study of what is) is undermined by phenomenology, because both the (subjective) act of knowing and the (objective) reality of what is are intertwined in intentionality (Zahavi, 2018: 27). Hence for the phenomenologist, the idea that what ‘things really are’

is something completely divorced from any context of use, network of meaning, or theoretical framework, and that whatever experiential and theoretical perspective we might adopt on them is consequently bound to miss its target, is not only a deeply

obfuscating claim, but also one that is epistemologically naive. On what basis and from what perspective could such a claim ever be justified? We cannot look sideways at our experiences in order to see to what extent they match with reality. This is so, not because such a view is extremely hard to reach, but because the very idea of such a view is nonsensical. Any understanding of reality is by definition perspectival. Effacing our perspective does not bring us any closer to the world. It merely prevents us from understanding anything about the world at all. (Zahavi, 2018: 28)

Understanding the systematic interrelation of subject and object in experience thus means to understand how our perspectival understanding of reality takes shape. The “aim of the phenomenological analysis” is hence “not to investigate either the object or the subject, either the world or the mind, but to investigate their interrelation or correlation” (Zahavi, 2018: 34).

Much of the conceptual work behind understanding the phenomenological correlation or phenomenology’s ‘correlationism’ is already done in understanding intentionality. Correlationism is simply “the view that subjectivity and objectivity cannot be understood or analysed apart from one another because both are intertwined and internally related.” (Zahavi, 2017: 174) Hence, correlationism is an epistemologically modest philosophical position: instead of making claims “about that which transcends us, [...] correlationism might be a way of acknowledging the finite and perspectival character of our knowledge.” (Zahavi, 2016: 301)

Turning to Figal (2016), correlationism describes what the object of phenomenology is, namely *phenomena*. For phenomenology, a phenomenon is “not an entity, nor a ‘natural object’, nor some matter of fact” (Figal, 2016: 58, translation MH). Instead, a phenomenon is a particular *relation* (Figal, 2016: 58). A phenomenon hence consists of two parts which are related, which belong together in their differentiation:

on the one hand, that which appears in a particular way, and, on the other hand, its appearance *in* perception, thought or experience. [...] If one recalls that a correlation is an interrelation, a symmetrical relation, then one will be able to grasp the relationship between subjective appearance and the objective—that which appears—as a reciprocal relation of affordance and possibility. (Figal, 2016: 58-59, translation MH)

As Figal (2016: 59) goes on to point out, even though phenomenologists following Husserl—namely Heidegger and Merleau-Ponty—will appear to move beyond the concept of intentionality, they will each continue to face the basic problem of intentionality and the phenomenological correlation by another name: phenomena are unitary, but their unity can only be understood correlationally, i.e. as a duality which contradicts the phenomena’s unity.

Heidegger's *being-in-the-world* and Merleau-Ponty's *lived body* and later concept of *flesh* are simply different conceptualisations of this correlation; responses to the intentional nature of experience as a correlation between subjective and objective, as a unity in difference.

5.1.1.2 Moments of departure

With a first basic definition of intentionality and correlationism laid out, I now turn to geography's past and present engagements with phenomenology. A genealogical investigation into the origins of an idea or a concept leads, as I argued previously, into increasingly opaque territory the further back one goes. Analogously to literal genealogy, the study of family trees, the records simply peter out and one is left with the first recorded mention of a name emerging—seemingly—out of nowhere. Of course, such sudden emergence is simply an artefact of the incomplete nature of any historical record: names are in circulation before their first recorded mention.

Turning to the history of phenomenology in geography, it would be wrong, however, to claim that phenomenology appears out of nowhere. As I highlighted in Chapter 3, Sauer's turn to phenomenology was motivated by his critique of genetic and environmental determinist approaches in geography. But Sauer's 'phenomenology' vanished as quickly as it emerged, both because Sauer did not engage with the phenomenological literature proper and because he himself abandoned the approach in his work following the *Morphology*.

Within the history of 20th century philosophy, Friedman's (2000) book *A Parting of the Ways: Carnap, Cassirer, and Heidegger* is (in-)famous for tracing the split of philosophy into analytic and continental philosophy back to an encounter between Carnap, Cassirer, and Heidegger at a conference at Davos, Switzerland in 1929. However incomplete, his approach of focussing on a moment of divergence to highlight what is unique to different intellectual trajectories emanating out of a shared starting-point (in philosophy's case, different responses to Kant's philosophical project) provides a useful model for tracing the genealogies of (sub-)disciplines.

Telling the story of the development of phenomenological theory within human geography would warrant (and has warranted) its own monograph-length study (Pickles, 1985). For the purposes of this thesis, I will briefly reconstruct different understandings of phenomenology in (human) geography that developed in the wake of 'Humanistic geography', four decades after the *Morphology* was published. In doing so, I identify three 'moments of departure', three parting of ways in which geographers engaged seriously with phenomenological theory, only

to arrive at distinct understandings of what phenomenology is or to move beyond phenomenology. I will go on to position my own phenomenological approach in relation to these.

5.1.2 Humanistic geography; or, geographical phenomenology

I begin with the (re-)introduction of phenomenology into human geography, four decades after the *Morphology* was published. Once more, phenomenology did not enter into geography out of nowhere: it was drawn upon—as most agree (Relph, 1970: 196; Harris, 1971: 170; Mercer and Powell, 1972; Walmsley, 1974: 103; Buttimer, 1976: 278; Entrikin, 1976: 616; Billinge, 1977: 54; Ley, 1977: 502; Backhaus, 2009: 138; Lea, 2009: 373; Pickles, 2009: 528; Jeffrey, 2017: 1)—as a clear response to the positivism and “scientism” (Parsons, 1969) that had come to dominate (human) geography. It is important to keep in mind *why* geographers turned to phenomenology, because this motivation inevitably shaped their understanding of phenomenology: overemphasising some aspects and occluding others.

5.1.2.1 Tuan’s Humanistic geography

Notwithstanding the awareness of the context out of which phenomenology emerged in geography, the exact origins of what I will call—borrowing the term from Billinge (1977: 62) and Pickles (1985)—*geographical phenomenology* are genealogically opaque. One of the earliest mentions of phenomenology proper in geography can, however, be traced back to Tuan’s (1965) “‘Environment’ and ‘World’”.

Their basic difference in meaning is recognized by the fact that when we speak of “environment” we tend to assume a “hard” scientific pose; whereas when we speak of “world” we speak as humanists. (Tuan, 1965: 6-7)

In drawing this distinction between ‘environment’ and ‘world’, Tuan recognises a reality that is inaccessible to the ‘scientific pose’, but still of import to geographers. According to Tuan (1965: 7), philosophers “with a bent toward phenomenology” show a particular interest in this difference. Within the scope of this three-page article, Tuan (1965: 7) however only offers a faint sketch of what phenomenologists might contribute to geography, drawing on Heidegger’s distinction between “surroundings” and “world”.

By 1971, Tuan (1971: 181) offers a more detailed account of phenomenology’s possible

contribution to geography, focusing on the “deeper levels of human nature” that geography can reveal to us. To reach these deeper levels, Tuan draws on phenomenology. At this early stage of the reception of phenomenology in geography, Tuan makes a nuanced distinction that is later increasingly lost in geographical phenomenology: As Tuan explains,

A phenomenologist may say that the essence of human nature is not a thing that can be uncovered by objective science—or by pure introspection. Consider introspection: if we draw the blinds and turn out the world so as to contemplate our inner nature, it is likely that we shall be rewarded with mere oblivion—that is, fall asleep. Consciousness has only a ghostly existence apart from the world, which is never entirely private. Even the fantasies of a madman are made of elements some of which, at least, others can also perceive: to that degree they are public and “objective.” Moreover, the structure of fantasy (the way the elements are put together) can often be intuitively understood by another. (Tuan, 1971: 181)

Following this definition, phenomenology does not merely study subjective experiences, but reflects on what is objective about them; their structure and the way they disclose the world to us.

Tuan goes on to present a few examples of how a phenomenological approach might inform geography. Concerning landscapes, for instance, geographers can not only nomothetically study the physical geography or “spatial disorder” of an area, but equally ideographically the “existentialist realm”, i.e. aspects of a landscape that “are neither rational nor irrational” but instead “lie in another realm of discourse—the realm of the will and of the search for meaning.” (Tuan, 1971: 183)

By 1976, Tuan shifts away from a closer engagement with the phenomenological literature in order to develop a wider approach to human geography he calls “Humanistic Geography”, which “specifically tries to understand how geographical activities and phenomena reveal the quality of human awareness.” (Tuan, 1976: 267; see also Seamon and Larsen, 2020) Instead of asking what phenomenology might have to offer geography, Tuan’s approach is to insist that geography has something to offer to the Humanities more broadly. As a branch of the Humanities, Humanistic Geography might, for instance, ask “What is the role of emotion and thought in the attachment to place?” (Tuan, 1976: 269)

Humanistic Geography then complements physical geography, “disclosing material of which the scientist, confined within his own conceptual frame, may not be aware.” (Tuan, 1976: 274) The humanistic geographer functions as a sort of “intellectual middleman”, who

takes these nuggets of experience as captured in art and decomposes them into simpler themes that can be systematically ordered. Once experience is simplified and given an explicit structure, its components may yield to scientific explanation. (Tuan, 1976: 274)

Tuan (1976: 275) is aware of the danger that such an approach might lend itself to accumulating “disjoint esoterica”, similar to the wider concern voiced by earlier geographers around geography merely accumulating facts. To avoid this danger, the “humanist [...] must seek a philosophy suited to his purpose”, a philosophy which “provides a unified point of view from which a whole range of human phenomena can be systematically evaluated.” (Tuan, 1976: 275) Phenomenology, Tuan notes in a footnote, might be one such philosophy.

5.1.2.2 Relph’s subjectivist phenomenology

In 1970, Relph, drawing mainly on secondary phenomenological literature (Kockelmans, 1966; Tymieniecka, 1962; Spiegelberg, 1965; Luijpen, 1966), assesses

the direct relevance to geography of some of the concepts of phenomenology. It is hoped that some relationships can be established which will contribute to the development of a philosophical background for humanistic approaches in geography. (Relph, 1970: 193)

Relph’s following characterisation of phenomenology is instructive, as it prefigures a principal way phenomenology will go on to be (mis-)understood in human geography. In line with Sauer’s use of phenomenology, Relph (1970: 193) argues that the phenomenological method “is not a method of analysing or explaining some objective and rational world through the development of prior hypotheses and theories.” The very next sentence, however, shows a very different, internalist understanding of phenomenology, one which I characterise as *subjectivistic* (see also Seamon and Larsen, 2020: 7):

In the description of the world of experience, or to use Husserl’s phrase, in the return to the things themselves as the objects of man’s experience, it is held that these objects cannot exist independently of man’s consciousness. (Relph, 1970: 193, emphasis MH)

Recalling my previous discussion of areal realism, this description of phenomenology would render phenomenology an anti-realist enterprise, content with a description of the world ‘for us’. Yet even in Relph’s own summary of the phenomenological method, the statement that “objects cannot exist independently of man’s consciousness” is inconclusive. After all, he argues for “essences”, the “elements and notions which characterize the nature of an entity or

phenomenon” (Relph, 1970: 194). Are entities or phenomena part of the mind/consciousness or the world (see also Entrikin, 1976: 618-619)? He goes on to argue that a further stage of the phenomenological method

involves the examination of the various ways in which these phenomena, within their fields of relationships and meanings, can appear; here it is recognized that the way an object or fact is perceived depends on the intentions of the perceiver toward the object as well as his experience regarding it, and that to understand an object it is necessary to examine these different perceptions of it. (Relph, 1970: 194)

If it is possible to distinguish between an object and the different perceptions we have of it, does the existence of such an object not indicate that it must exist, in some form, outside of “man’s consciousness”? Otherwise, how would we be able to differentiate between how an object is intended and what an object itself is?

In both Relph’s early work and in contemporary discussions of phenomenology (Ash and Simpson, 2016), the concept of *intentionality* acts as a burning lens on what I argue is a basic misunderstanding of phenomenology in much of human geography; a subjectivist construal of phenomenological theory.

Relph (1970: 194) explains that in “phenomenology intentionality does not refer simply to a deliberately selected direction or purpose, but also to a relationship of being between man and the world.” (For an identical understanding of intentionality, see also Walmsley, 1974: 102) Intentionality, as I argued in the definition provided above, is not *also* understood as a “relationship of being between man and the world”; intentionality is just another word for the interrelatedness of subject and object in consciousness. However, Relph goes on to argue that ‘man’

is understood as the source of acts of intention, and it is only through the study of man’s intentions that we can comprehend the world, for it is these that give meaning to man’s behaviour. The world is thus understood as being essentially subjective [...]. It follows from the concept of intentionality that there is no single objective world; rather there is a plurality of worlds—as many as there are attitudes and intentions of man. As an individual’s intentions change so does the world; to a fisherman water supports and hides the object of his search, but to a research chemist water is the substance with the formula H₂O. Since the fisherman and the chemist may not be different individuals, but a single person with different aims, this means that there are as many worlds as there are individuals and the attitudes which they can assume. These many worlds are not isolated

within individuals because the very intentionality of man's acts makes them transmittable, and because the common world of "what there is" does exist. This is an extreme anthropocentric view of the world in which man and nature are brought into a single system unified in its reference to man and his attitudes [...]. (Relph, 1970: 194-195)

Although Relph distinguishes the *common* meaning of intentionality as a synonym for purposiveness or deliberateness from the *phenomenological* meaning of intentionality as the interrelatedness of subject and object in consciousness, he later slips back into the former use of the term, into a "voluntaristic conception of intentionality" (Pickles, 1985: 60). Instead of describing intentionality as a *structure*, Relph describes it as an *action* which bestows meaning upon its object. The world constituted through this bestowal of meaning is, then, "essentially subjective". Arguably, his own account of the consequences of this assumption presents a persuasive case for the inconsistency of this position:

Referring to one and the same object, Relph argues, I switch between two worlds when I describe water as H₂O or as a substance to fish in. These worlds are, sensibly, not isolated from each other because I am able to switch between both in virtue of a "common world of 'what there is'" existing. This ultimate world includes the object I am referencing when I describe water as either H₂O or as a substance to fish in. But what is the nature of this 'ultimate', common world? How am I able to comprehend or experience it if, according to Relph, phenomenology precludes the possibility of experiencing an objective world? Even on its own terms, how can one make sense of this "extreme anthropocentric view of the world in which man and nature are brought into a single system unified in its reference to man and his attitudes" when, in Relph's own account, this unity is not guaranteed by 'man and his attitude', but by the "common world of 'what there is'" (see also Pickles, 1985: 71)? As Husserl ([1917] 1981: 15) observes, the "belief in the Objective", in a 'common world of what there is', is as much a "belief characteristic of simple experience" as it is of "empirical theory".

This difficulty of trying to distinguish between different worlds mirrors a more contemporary debate in anthropology under the heading of the *Ontological Turn* (Kohn, 2015; Heywood, 2017; Holbraad and Pedersen, 2017). In brief, I share Graeber's (2015) scepticism of any account of multiple worlds in the strong ontological sense. Repeating an argument Graeber makes, how does one account for the fact that we do, in some sense, appear to live in some sort of shared reality if we assume the plurality of worlds in the strong sense? How would one be able to encounter and—to an extent at least—understand each other? Where does one draw

the line between different worlds? Does an individual, do different communities or ‘cultures’ inhabit different worlds and, if so, at which scale? These sorts of questions have led proponents of the ontological turn to argue that they are not arguing for plural *ontologies*, but more sparingly for a *methodological* imperative that starts from the assumption of different ontologies in order to facilitate more open ethnography (Heywood, 2017). To name one example of where the question of ontological pluralism turns acute, arguing for the reality of climate and its changes necessitates the assumption of a shared reality to make sense of (global) anthropogenic climate change.

It is perhaps unfair to over-burden Relph’s introductory account of phenomenology with philosophical critique. However, it is important to highlight these problems here for a number of reasons. Firstly, Relph’s rendering of phenomenology questions the very heart of the claim I am making through-out this thesis; namely that phenomenology gives us a unique point of access to reality. For climates to be phenomenologically real means that they exist outside of “man’s consciousness”. Otherwise, I might have to agree with Hartshorne that climates are just a trick played on me by language.

Secondly, Relph’s characterisation renders a whole aspect of phenomenology invisible that I deem to be of central importance not only for phenomenology itself, but for its application to geography more specifically (Hepach, 2021). Phenomenology is not only interested in subjective experience, but also in the ways in which reality is disclosed to us in experience and consciousness. Of course, as I argued above with the help of Zahavi, as humans, we have no access to reality apart from experience and consciousness. However, that does not mean that the objects of phenomenological study are somehow ‘in our heads’. Instead, phenomenology simply asks us to be continuously aware of the fact that we have no immediate access to objective reality; our access is always mediated through various ways in which we intend said reality (herein the phenomenological approach is similar to the methodological recasting of the ‘ontological turn’, see also de Castro, 2014: 46, fn 5). As Ley (1977: 503) explains,

it can be shown that at the root of an empirical science, there are necessary taken-for-granted assumptions, the same subjective naïvety as occurs within our own private life-worlds. The revelation of the subjective at the root of a science which empirically rejects the role of subjectivity, prepares the way for a constructive synthesis in which subject and object are re-united as they are in naïve experience. A phenomenological examination of social science thus begins with an analysis of presuppositions, with the exposure of assumptions which are unselfconsciously taken for granted. (Ley, 1977: 503)

Rephrased in the language just introduced, my critique of anti-realist approaches to areal units and climates is precisely a critique of the rejection of subjectivity, which necessarily plays a part in *both* scientific and phenomenological approaches. The question of areal realism can hence not be decided along a dividing line between ‘subjectivity’ and ‘objectivity’. That line—this might be the key lesson of phenomenology—is impossible to draw. The anti-realist insistence on ‘objective’ criteria which would be necessary to distinguish areal units simply obscures the subjectivity at play in horizontal approaches to geography. As Furia (2022: 198) has more recently argued, this fact is indicative of a “naïve form of realism”, given that the “Cartesian subjectivity presupposed by geographical positivists is usually implicit. The objectivity of geometrical space is not acknowledged as a rationalist abstraction, but is rather understood in realist terms.”

Ley’s (1977) application of phenomenology to (social) geography also calls into question Tuan’s assessment that a phenomenologically informed geography should act as a ‘middleman’ between science and experience. A phenomenological geography should, as Sauer argued, not only lay claim the ‘humanistic’ aspects of reality that are categorically inaccessible to a positivist approach, but must equally critically evaluate the very concepts that lie at the heart of ‘scientific’ geography, e.g. area, region, landscape, and climate. Otherwise, the distinction between scientific and humanistic geography runs the risk of reproducing the illusory line between objectivity and subjectivity, the naïve realism phenomenology seeks to undo.

5.1.2.3 Buttimer’s critical phenomenology

Engaging more closely with the work of Husserl, Heidegger, and Merleau-Ponty, Buttimer (1976) draws out the key phenomenological insight that a subjectivist approach to phenomenology risks obscuring. As Relph might agree, phenomenologists have challenged

many of the premises and procedures of positive science, they have posed a radical critique of reductionism, rationality, and the separation of “subjects” and “objects” in empirical research. (Buttimer, 1976: 278)

The critique of separating subject from object, however, not only applies to “positive science”, but to phenomenological accounts of experience as well.

Phenomenology tries to transcend this Cartesian dualism [between subjective and objective modes of knowing], and proposes a mode of knowing which recognizes the validity of both modes, but is identical with neither. Its initial criterion is the creation of

a climate which makes it psychologically safe for the other person, event, or phenomenon to reveal its internal frame of reference: it seeks to encounter, rather than master, the object to be known. Whereas the subjective mode concentrates on unique individual experience, and the objective mode seeks generalization and testable propositions concerning aggregate human experience, the “intersubjective” or phenomenological mode would endeavor to elicit a dialogue between individual persons and the “subjectivity” of their world. Generalizations (the “third person mode”) should derive from a more basic relationship between the actors (first and second persons) within the drama of the life world. (Buttmer, 1976: 282)

Buttmer here situates a phenomenological approach between a subjectivist and objectivist approach, as a type of critical enterprise. In “everyday life, one does not reflect upon or critically examine [...] the prereflective, taken-for-granted dimensions of experience, the unquestioned meanings, and routinised determinants of behaviour” (Buttmer, 1976: 281), just as in “the scientific or ‘naturalistic’ mode of knowing, an individual may become so engrossed in the objects of his concern that he overlooks himself and the perspectives he brings to the study of these objects.” (Buttmer, 1976: 279) Phenomenology seeks to raise this prereflective dimension of both scientific and everyday life to conscious awareness, whilst admitting that there “is no absolutely transcendent standpoint available to man from which he might view himself and his world in relation.” (Buttmer, 1976: 279)

In line with Humboldt’s approach, which I detailed in Section 3.3.3.2, Buttmer (1976: 282) argues that neither “of the two main currents of thought in Western science—empiricism and idealism—has satisfactorily explained experience and perception.” Both (positivist) empiricism and idealism “imply some absolute truth” (Buttmer, 1976: 282). For the empiricist, that absolute truth is “external to the knower”, i.e. the objective world ‘out there’, whereas for the idealist, that absolute truth is “an absolute consciousness. Neither leaves room for the finiteness of human existence, and this is the crucial task” (Buttmer, 1976: 282) phenomenology seeks to accomplish: grasp reality in awareness of the fact that it is only ever given to us as a tension between subjectivity and objectivity.

Hence phenomenology’s interest in *phenomena*, i.e. the way in which an object, event or person reveals itself to oneself. Instead of mastering the object of experience, as both the empiricist or idealist might do in light of their respective claim to “absolute truths”, the phenomenologist seeks to encounter the object according to its own “internal frame of reference”, opening a “dialogue” between mind and world.

Buttmer’s careful rendering of phenomenological theory turns conspicuous the depth of

the misunderstanding underlying idealist or subjectivist approaches to phenomenology: By reifying subjective experience as the object of phenomenological study, they obscure the reflective or critical enterprise at the heart of phenomenology, namely to question both subjective *and* objective reified forms of knowing.

5.1.2.4 Parting of ways I: The limits of humanism

The first ‘parting of ways’ I identify took place in 1977, in the first issue of the 67th volume of the *Annals of the American Association of Geographers*. In the commentary section of the issue, Relph (1977) responds to Tuan’s (1976) and Buttimer’s (1976) articles previously published in the *Annals*. Following Relph’s comment both Tuan (1977) and Buttimer (1977) reply.

In assessing Relph’s response, it is difficult not to mention the overall accusatory tone of his response, striking a strange balance between gesturing at a systematic or fundamental critique of both Tuan’s and Buttimer’s work whilst not actually engaging with the deeper philosophical questions at stake.

Tackling Tuan’s approach first, Relph (1977: 178) argues that Tuan pursues a one-sided approach to humanism: overemphasising ‘humanism’ as an object of study at the cost of pursuing ‘humanism’ as an ethical attitude irrespective of specialisation.

From this perspective a humanist geographer is not merely one who investigates the ambiguities in man-nature relations or the varieties of geographical knowledge, but someone, whether geomorphologist or spatial analyst or regional specialist, who conducts his life and studies humanistically, who is tolerant of the views of others yet constantly questions dogma and prejudice, and who always considers the human implications of his own decisions and actions. (Relph, 1977: 178)

To avoid this confusion, Relph (1977: 178) suggests grouping Tuan’s approach “under a title such as ‘experiential’ geography, or perhaps not named at all—just adopted and used.”

In the following section, Relph (1977: 178) introduces phenomenology in relation to his critique of Tuan.

While I believe that humanism is an [ethical, MH] attitude rather than a branch of knowledge, I also recognize that there are approaches and philosophies which reflect and encourage this attitude. Phenomenology is certainly one of these for it stresses the anthropocentric character of all experience. (Relph, 1977: 178)

This introduction of phenomenology is confusing on a number of levels. First, Relph argues that humanism is an (ethical) attitude as opposed to a branch of knowledge, which might instead be called “experiential geography”. Then, he argues that phenomenology encourages this attitude because it stresses the “anthropocentric character of all experience”. However, would it not be more appropriate to say that phenomenology encourages pursuing humanism as a branch of knowledge, and not as an ethical attitude, in light of its focus on the experiential? As Relph himself adds in the sentence following the above section, “it has to be acknowledged that these [phenomenological] methods, like any others, can be and have been used with scant attention to humanist concerns.” (Relph, 1977: 178) So what is it about phenomenology that would aid in the pursuit of a humanist attitude?

In light of Relph’s elusive understanding of phenomenology, his critique of Buttimer’s work is notable. After applauding her attempt to correct the lack of use of phenomenology in geography, Relph explains that he

would much prefer to see substantive applications rather than discussions of the possible uses of phenomenology. In programmatic statements there is a serious danger of introducing misleading impressions and confusions, for they are inevitably derived from diverse and complex philosophical discussions about phenomenology. Furthermore phenomenology does not summarize easily for the reason that it has to do with the variety of human experience. It is much better, then, to show by example the insights that phenomenology does give than to suggest what insights it might possibly offer. (Relph, 1977: 178)

Again, Relph’s understanding of phenomenology is confusing on a number of levels. He identifies a danger in programmatic statements—that they may be misleading and confusing—without considering the consequence of *not* providing such statements, namely an overall confusion around what geographical phenomenology even means. This argument is particularly jarring in light of his own programmatic (mis-)representation of phenomenology in his earlier article discussed above. Finally, his statement that phenomenology does not summarise easily because it has to do with the variety of human experience is itself a programmatic statement based on a misunderstanding of phenomenology as subjectivist or idealist. If anything, this stage of geographical phenomenology could do with *more* programmatic statements, clarifying what it is a phenomenological approach is meant to accomplish, aside from first-person accounts of geographic phenomena. As Billinge (1977: 59) lucidly argues in relation to work in geography on phenomenology,

the fact that certain superficial parallels can be drawn between the Husserlian view and a number of geographical concepts confirms the need for geographers to look more carefully at what phenomenology has to offer, and consider fully the problems of its implementation.

Tuan's (1977: 180) response to this commentary is very short, explaining that even though he views humanistic geography as a 'branch of knowledge', "humanistic geography is not restrictive because its point of departure is no less than the range and quality of human awareness."

Buttimer's (1977: 180) response goes into greater detail. One aspect she highlights, which implicitly critiques the basis of Relph's subjectivist phenomenology, is that humanistic geography has "too close an association with anthropocentrism to be effective communicators of my basic position." Instead of arguing that geography should borrow from phenomenology the study of subjective experience, Buttimer (1977: 181) argues, that geographers' "most important contribution to the dialogue with phenomenology" might be the insight that "our 'intersubjective' worlds, as well as the flights of imagination, myth, and scientific theory constructed by the human mind, need to be studied in the context of our common terrestrial home", i.e. in relation to the 'outside world'. In her conclusion, after observing that Relph's "remarks about my conservatism are somewhat amusing", Buttimer argues explicitly that

I wished to caution about the confusion of phenomenology with any or all attempts to explore "subjective" experience, and protest against the tendency to envision it as panacea for disillusioned positivists. (Buttimer, 1977: 183)

Billinge (1977: 63) has offered perhaps the most lucid evaluation of Relph's geographical phenomenology in the 1970s, arguing that "it is important to appreciate that the revised phenomenology, advocated by amongst others Relph, in no way retains the most important elements of the Husserlian philosophy."

If the lessons we are to learn from phenomenology are simply that there are non-quantifiable sources which deserve and demand our attention, and that a subjective viewpoint is not necessarily illegitimate, then these are self-evident truths which need not be hidden behind a façade of Husserlian vocabulary. (Billinge, 1977: 66-67)

5.1.3 Phenomenological geography

Looking back at the debate amongst Tuan, Relph, and Buttimer in the *Annals*, it is striking that one argumentative strategy is absent from their attempts to defend their respective approaches: turning back to a detailed discussion of what phenomenologists themselves wrote. In contrast, Entrikin (1976), Billinge (1977), and Johnson (1983), for instance, try to analyse how well geographical phenomenology matches Husserl's original phenomenological project, concluding that both are substantially different. In one respect, this is not a particular problem for geographical phenomenologists. In Relph's work in particular, phenomenology might have inspired his approach, but he has little patience for a detailed exegesis of phenomenological theory (Relph, 1976: 18, fn 4).

Pickles' (1985) book *Phenomenology, Science, and Geography*, is written, in part, as a direct response to the geographical phenomenology outlined above and is perhaps the most detailed study of the relationship between phenomenology and geography to date. Pickles (1985: 5) is the first to provide a detailed answer to the question "if this 'phenomenology' is a sound and viable interpretation of phenomenological principles as such". In Pickles' mind, simply distinguishing geographical phenomenology from phenomenology proper, as Relph might suggest, does not resolve the underlying issue.

If the seminal papers introducing phenomenology to the discipline distorted its nature, and subsequent discourse developed in terms of these claims, then the project itself, even where it goes beyond phenomenology, must be questioned. (Pickles, 1985: 6)

The problem of distortion extends to opponents of geographical phenomenology too, in so far as they may critique or develop approaches in contradistinction to a conception of phenomenology that is mistaken (Gregory, 1978). As I show in Section 5.1.4, this problem extends to contemporary engagements with phenomenology in geography.

5.1.3.1 Against geographical phenomenology

Early in his book, Pickles is quick to point out the underlying problem with 'humanistic' approaches to phenomenology in geography. Both 'objectivist' (or positivist) and 'subjectivist' (or humanistic) approaches to geography share, as Buttimer previously outlined, a similar problem. The assumption of reality existing 'objectively' out there raises the question how we come to know said reality. Equally, the assumption that all experience is essentially subjective raises the question how we come to know anything about the world—or a shared reality—at all. Instead of solving this problem of knowability, both approaches simply render their onto-

epistemological assumptions absolute. This leaves humanistic geography in the following situation:

Either an objectively existing independent real world is still presupposed [...], or independent multiple realities are presumed, or the possibility of any intersubjectively known world is denied, resulting in a radical subjectivism and ultimately in relativism. (Pickles, 1985: 38)

A subjectivist or ‘humanist’ approach to phenomenology obscures, as I argued above, the very aspect of phenomenology that might provide a solution to this problem of knowability raised through the increased awareness of humanistic concerns, namely that phenomenology conceives of all knowledge and experience as *intentional*, i.e. as distinct modes of subject and object being correlated. As Pickles explains,

The unasked question in all these deliberations concerns the mode of being characteristic of the knowing subject. If knowledge is seen as a special mode of man’s orientation toward the world [of intentionality, MH], then it no longer makes sense to conceive of knowledge as a process by means of which the ‘subject’ creates ‘for and in himself’ ‘representations’ of something that is ‘outside’ the knowing subject. The question of how these ‘representations’ can be measured against the ‘external reality’ similarly makes no sense. Indeed, for a being which is essentially intentional the question of the existence of the world and possibilities for proving it make no sense. They make sense only for a subject which is worldless, or unsure of its world, and even then the questions themselves presuppose that world. (Pickles, 1985: 37)

In light of this deep onto-epistemological incongruency at the heart of geographical phenomenology, why did geographers turn to phenomenology? As alluded to above, the answer to this question lies in what geographical phenomenology was responding to: positivism.

Pickles (1985: 42) argues that geographers turned to phenomenology not because it provided a shared method, but because it offered “a sound phenomenological base” on which geographers could agree. Citing both Relph’s (1976) and Buttimer’s (1976) work, Pickles (1985: 42) identifies “a particular phenomenological basis to geographic understanding” in concepts such as “immediate experience of life” or “life-world”. Irrespective of their differences, Tuan, Relph, and Buttimer share the conviction that there is a sort of ‘geographical experience’ to which geographers have privileged access. Phenomenology—however

construed—then gives license to geographers to make this experience the basis of geographical research. In this

world phenomenology takes on the role merely of an *archaeology*, wherein the hidden layers are investigated to reveal the hidden artifacts of everyday geographical experience. Geographical experience is prior to geographical science—ontologically and historically—in its broadest perspective, as ‘formal’ geography. Formal geography is a thematization of this experience. Phenomenology is the act of recovering and mediating that original geographical experience. Such a position (if a tenable description of the state of affairs) has immediate consequences for the interpretation of phenomenology. As archaeology its principal aim is retrieval. Abstraction and reduction are redundant since that experience (as geographical) exists prior to the scientist’s attention to it. The geographer’s task is to describe it (naively in the natural attitude). (Pickles, 1985: 43)

My more detailed discussion of Husserl’s method in Section 5.3.4 will explain how exactly geographic phenomenology falls short of the phenomenological method proper.

At this stage, returning to my earlier indication that it is important to understand what geographical phenomenology was responding to in order to comprehend how phenomenology came to be so misconstrued, it is important to recognise how employing phenomenology in order to elevate the ‘immediate experience of life’ to an object of geographic study makes it impossible to recognise phenomenology’s ultimate aim: to question both the immediacy or taken-for-granted nature of ‘objective’ science *and* ‘subjective’ experience. Geographical phenomenology then becomes caught in “a certain independent momentum” (Pickles, 1985: 71) which precludes the possibility of a more accurate understanding of phenomenology that would question the very premise of geographical phenomenology as a response to positivism.

5.1.3.2 Phenomenological geography

In the second half of his book, Pickles (1985: 90) turns to the writings of Husserl and Heidegger in order to present their own arguments, “rather than just present just another geographer’s interpretation.” In doing so, Pickles highlights what a phenomenological approach more closely related to Husserl’s and Heidegger’s original project might be able to contribute to geography. To distinguish this new dialogue between geography and phenomenology from previous attempts (‘geographical phenomenology’), Pickles (1985: 109) introduces the term “phenomenological geography”.

In light of my own extensive discussion of Husserl below, and so as not to repeat “just

another geographer's interpretation" of phenomenology, I will refrain from reconstructing Pickles' account of Husserlian and Heideggerian phenomenology in detail.

In brief, the distinction between geographical phenomenology and phenomenological geography is made cogent by Pickles through a discussion of Husserl's eidetic and transcendental phenomenology. What both approaches share, in contrast to geographical phenomenology, is that they do not take subjective experience at face value.

Applying Husserl's early work on eidetic phenomenology to geography, Pickles (1985: 109) argues that "a phenomenological geography [...] will not refer to actual experiences, factual places and worlds, but to the formal and universal structures of environmental experience, placehood and worldhood." These formal and universal structures of various geographic phenomena are their essences or, to use Husserl's term, *eide*.

Discussing Husserl's later work on transcendental phenomenology, Pickles (1985: 117) argues that for Husserl "the lifeworld is not the deepest layer to which phenomenological analysis can penetrate". Whereas geographical phenomenologists might take the life-world to be the ultimate object of phenomenological study, Husserl himself asked how the life-world itself is constituted, what the conditions of possibility (what philosophers call the transcendental) of the life-world are.

For Pickles (1985: 107-111), the key contribution of phenomenology to geography is this shift away from facts—both the positivist facts of science and the subjectivist facts of experience—to essences or structures, to the ways in which (geographic) facts are constituted. This focus on the conditions of possibility of science in general and of geography in particular motivates Pickles turn away from Husserl towards Heidegger. Taking a further step back, Pickles (1985: 127) questions not only what is taken for granted in positivism and geographical phenomenology, but reflects on the ways in which Husserl's own approach is theory-laden. What is the origin of Husserl's theoretical attitude itself; the origin of a "traditional understanding, where 'knowing the world' is interpreted as a relation between a subject and its object" (Pickles, 1985: 127)?

Building on Heidegger's ([1927] 2010) *Being and Time*, Pickles argues that in order for geography to be a self-aware discipline, it must reflect on the origins of its basic concepts in "human spatiality" (Pickles, 1985: 154). A phenomenological geography would "seek an ontological, existential understanding of the universal structures characteristic of man's spatiality as the precondition for any understanding of places and spaces as such." (Pickles, 1985: 155)

For instance, Pickles (1985: 158) seeks "to question the assumption that pure extension, as

projected by technological science, is the sole genuine meaning of space”. Following Heidegger, he instead is “concerned with the ontological character of spatiality.” (Pickles, 1985: 158) As Pickles (1985: 161) correctly notes, Heidegger argues that spatiality should not be understood as an objectively given, extended space, but as a relation between man and his objects of concern. In a memorable passage, Heidegger ([1927] 2010: §23, 98) notes how an “‘objectively’ long path can be shorter than an ‘objectively’ much shorter path which is perhaps an ‘onerous one’ and strikes one as infinitely long.” Following Pickles’ project, a phenomenological geography would seek to clarify our concept of space by articulating the underlying ontological character of spatiality, which is revealed to us in our everyday being-in-the-world.

5.1.3.3 Heidegger’s nature problem

To fully evaluate Pickles understanding of phenomenology would mean to provide an extensive account of the relationship between Husserl and Heidegger, between ‘intentionality’ and ‘being-in-the-world’. Refraining from providing such a complete account given the scope of this thesis, I will only briefly reflect on a key difficulty of Pickles’ (1985: 170) call to develop “a regional ontology of the geographical” based on Heidegger’s fundamental-ontological project in *Being and Time*; a difficulty that is closely related to the problem of providing phenomenological accounts of objects independent of human experience, such as—following my argument—regions, areas, landscapes or climates.

The difficulty is already implied in Pickles’ (1985: 145) more narrow focus on what he calls *human sciences*. In casting geography as a human science, Pickles’ ties geography’s key concepts back to a primordial practical involvement with the world. Heidegger’s whole project is then read by Pickles as an ontological clarification of this primordial practical involvement with the world prior to theoretical reflection, i.e. prior to concepts such as ‘subject’ and ‘object’.

From a Heideggerian perspective, the central concept to understand this primordial practical involvement, which is part of what ‘being-in-the-world’ means, is the “referral nexus of significance”, to use Haugeland’s (1982: 18) translation of the original “*Verweisungszusammenhang der Bedeutsamkeit*” (Heidegger, [1927] 1967: §26, 123). Simply put, Heidegger argues that all modes of thematising the world are grounded in a primordial referral nexus of significance, in a network of meaning in which things come to matter to us due to the care we take for our own lives and the lives of others.

As Heidegger ([1927] 2010: §15, 66) explains in another memorable passage, we do not

encounter “steel, iron, metal, stone, wood” as somehow strewn about the world, to be then coincidentally ‘picked up’ as objects of scientific study. Instead, we first come to encounter and discover such materials of nature as they help us take care of ourselves and others. Steel, iron, metal, stone, and wood come to matter to us as the materials out of which, for instance, our tools are made of, with the help of which we construct buildings as safe dwellings. The ‘objects of nature’ being disclosed in this referral nexus of significance, in which the meaning of everything points back to its role in taking care for ourselves and others, precedes the later explicit thematisation of the ‘objects of nature’ as objects of scientific study.

Heidegger generalises this point to nature itself.

Hammer, tongs, nails in them selves refer to—they consist of—steel, iron, metal, stone, wood. “Nature” is also discovered in the use of useful things, “nature” in the light of products of nature. [...] The forest is a forest of timber, the mountain a quarry of rock, the river is water power, the wind is wind “in the sails.” As the “surrounding world” is discovered, “nature” thus discovered is encountered along with it. We can abstract from nature’s kind of being as handiness; we can discover and define it in its pure objective presence. But in this kind of discovery of nature, nature as what “stirs and strives,” what overcomes us, entrances us as landscape, remains hidden. The botanist’s plants are not the flowers of the hedgerow, the river’s “source” ascertained by the geographer is not the “source in the ground.” (Heidegger, [1927] 2010: §15, 66)

This passage points to the key limitation of Heidegger’s approach in *Being and Time*: it cannot account for a reality independent of the referral nexus of significance. This becomes most apparent in his discussion of nature. Both a Heideggerian approach to nature as “handiness”, i.e. nature as a resource, as well as a scientific approach to nature as an object of study, by the botanist or geographer, fail to capture nature as that which necessarily transgresses our referral nexus of significance, that which “overcomes us”. As Padui (2013: 183) succinctly argues, neither “is this nature for human cognition, nor is it for human utility”. As such, it simply falls out of the Heideggerian framework (Heidegger later engages with nature in Heidegger, [1954] 2008).

This, arguably, presents a substantial challenge to Pickles approach to ground geography in Heideggerian ontology. What would a phenomenology of landscape or climate amount to if the existence of either outside of their meaning for us is foreclosed?

Although Pickles clearly develops a more accurate, nuanced, and sophisticated understanding of phenomenology than the geographical phenomenology before him, his

concentration on Heideggerian phenomenology as a systematic programme to ground geography as a *human* science repeats the one-sided understanding of phenomenology I previously called attention to in my turn to Sauer's work in Chapter 3. Phenomenology's application to geography should not be limited to our practical involvement with the world, but should call further attention to phenomena which exceed the self-referentiality implied in the Heideggerian project. This is of particular import, as I will argue, with respect to climate.

5.1.3.4 Parting of ways II: Pickling geography

Published the same year as Pickles' *Phenomenology, science, and geography*, Seamon and Mugerauer (1985) published an edited volume on the application of phenomenology to geography, moving away from Husserl and towards Heidegger as well. Taking Buttimer's and Seamon's contributions to the edited volume as an example, Rehorick (1991: 368) observes that by

Pickles' standards, both Buttimer and Seamon have come up short. If one can say that Buttimer's effort is bitter-sweet to Pickles' intellectual palate, then Seamon's essay would leave him with a sour aftertaste. (Rehorick, 1991: 368)

As the title of his review essay suggests—"Pickling human geography: The souring of phenomenology in the human sciences"—Rehorick (1991: 360) is wary that "Pickles' advocacy of a return to phenomenological purism might condemn human scientists, once again, to endless propaedeutic debates about what a 'geographical phenomenology' or 'phenomenological geography' might look like", even as he agrees that Pickles critique is technically correct.

Looking back at the influence of Pickles' book, it is clear that he did not immediately succeed in persuading the geographical profession to engage in sustained close readings of Husserl and Heidegger. To understand why, to understand how geographical phenomenology and phenomenological geography parted, I will briefly turn to the reviews *Phenomenology, science, and geography* received in the geographical literature. In doing so, I aim to reflect on what a phenomenological approach to geography might do better.

Most reviews of *Phenomenology, science, and geography* share (i) an appreciation for setting the phenomenological record straight concerning geographical phenomenology and (ii) a frustration with the lack of phenomenological geography's applicability; the "programmatic part of Pickles's book is much less effective than the polemical" (Daniels, 1986: 279; see also

Eyles, 1987; Hill, 1987).

Cosgrove (1986: 235) makes his understanding of phenomenology clear by engaging with Husserl's writing directly and labelling it "radically idealist" before even turning to Pickles' book. Having rendered phenomenology idealist, Cosgrove (1986: 235) goes on to critique Pickles for skirting "around the apparent contradiction between the transcendental certainty of Husserl's idealism and the empirical concerns of geographical research." His next point of critique is one universally shared by the reviewers of *Phenomenology, science, and geography*, namely that Pickles' offers too little detail or gives no example as to how a 'correct' understanding of phenomenology–phenomenological geography–might be put into (geographical) practice. On the one hand,

Pickles is absolutely correct in demolishing the idea that phenomenology is anti-science, and that it offers some ready justification for the casual retailing of personal anecdotes with a place- or region-related flavour, a soft-centred subjectivism. Equally, he is convincing in arguing that the equation of phenomenology with the study of the taken-for-granted-world of everyday experience is a parody of the philosophy. (Cosgrove, 1986: 236)

On other hand, however, the phenomenological geography envisioned by Pickles' would, according to Cosgrove (1986: 236), amount to little more than "pure reflective theory; it would have nothing to say on methodology or the verification of facts and relationships in the empirical study of geographical science."

After highlighting that Pickles' own approach might be tinted by his "graduate school guru" Kocklemann, Daniels (1986: 279) too critiques *Phenomenology, science, and geography* for not providing much detail on the possible "realization" of phenomenological geography. On the other hand,

Pickles nicely exposes the opportunism of those humanistic geographers who have used the imprimatur of phenomenology. Rightly he castigates the casual quoting of phenomenological texts which gives to their writings a philosophical tone while, in the process, confirming an attitude that is profoundly anti-intellectual—an attitude best summarised by Seamon's preference for the "spirit of phenomenology rather than its letter" and Buttimer's belief that close textual analysis would consign phenomenology to the archives "where only the well read and philosophically inclined may touch it" [...]. Pickles emerges from the archives to show how 'geographical phenomenology' is often superficial and sometimes quite misleading. He sees as particularly damaging its

construal as a softheaded subjectivism. For Pickles, phenomenology is hard-core and implies a radical reformation of what the foundations of geography, or any other human science, are.

Prince (1986: 98-99) too acknowledges that, thanks to Pickles, the “record has been put straight”, although Pickles “does not indicate what phenomenologists should do here and now”.

The harshest reviews were published by Foote and Mugerauer (1986) and Johnston (1986). Foote and Mugerauer (1986: 450) are the only reviewers to push back on Pickles’ critique of geographical phenomenology. Foote and Mugerauer (1986: 450) note that “the author is much more forgiving of the limitations of Husserl and his interpreters than he is of the geographers whose early programmatic statements he criticizes.” Foote and Mugerauer (1986: 450) go on to shift the goal posts with regards to the persuasiveness of Pickles’ arguments: Instead of judging (and perhaps having to admit) which interpretation of phenomenological theory is more accurate, Foote and Mugerauer (1986: 450) argue “the reader should expect new insights capable of compensating for years of misunderstanding, or a report on research demonstrating the validity of Pickles’s reassessment.”

Johnston’s (1986) review is equally critical and remarkable in light of his admission that he neither understands phenomenology in general nor Pickles’ book. Given Pickles’ extremely detailed and systematic critique of geographical phenomenology, the claim that his “criticism is largely by innuendo, and no clarification is offered” (Johnston, 1986: 123) is puzzling. Turning to primary phenomenological texts is viewed equally unfavourably by Johnston (1986: 123): “By letting Husserl and Heidegger speak for themselves, Pickles makes it clear why so many people are confused.”

In light of the dismissal of Pickles’ turn to primary philosophical texts by Foote and Mugerauer (1986) and Johnston (1986: 123), Birkenhauer’s (1987) German-language review of *Phenomenology, science, and geography* is particularly interesting. As he explains, viewed through German eyes, it takes some courage to raise questions concerning the epistemological and ontological foundations of geography, seeing as “German geographers frown upon engagement with philosophical questions.” (Birkenhauer, 1987: 122, translation MH; on the relationship between German geography and phenomenology, see also Hasse, 2017) Although Birkenhauer (1987: 122, translation MH) too argues that Pickles should have at least clarified his approach with the help of an example, he nonetheless agrees with Pickles’ overall assessment that phenomenology, properly conceived, may help lead geography out of the “positivistic cul-de-sac”. Birkenhauer (1987) identifies the key advantage of a

phenomenological approach as outlined by Pickles, namely that it allows us to reconsider the ontology or nature of the phenomena geography is interested in.

In line with Birkenhauer's conclusion, I too see phenomenology's greatest potential for geography in reconsidering the ontology of phenomena of interest to geography. Perhaps surprisingly, phenomenology then does not so much explain *how* geographers should study phenomena, but instead helps elucidate *what* objects of geographic study are even possible. Learning from the overall appreciation of Pickles' turn to primary phenomenological literature, my own phenomenological approach will be guided by a closer reading of Husserlian phenomenology. Learning from the overall dissatisfaction concerning what phenomenology means for geographic research, I tie my reading of Husserl back to the problem of accounting for experiences of climate and its changes, which has guided this thesis through-out.

5.1.4 'Posting' phenomenology

A third and the most recent phase of engagement with phenomenology returns to phenomenological theory through a more critical lens in order to develop phenomenology beyond its (supposed) limitations. I take the work of Rose (2002; 2006) and Wylie (2005; 2006; 2009) to be emblematic of the beginning of this movement.

5.1.4.1 Beyond structuralism

Rose's and Wylie's return to phenomenological theory is linked to a frustration with 'new' cultural geography. As Rose (2002: 457) explains, 'new' cultural geography critiqued previous 'traditional' approaches to cultural geography where "culture was conceptualised as a set of identifiable traits or characteristics that could be read off the landscape and matched to particular groups." Instead of reifying culture as a super-organic entity (Duncan, 1980), as a "transcendental imperative force" (Rose, 2002: 458), 'new' cultural geographers sought to "emphasize the role of human agency in the making of social systems and critique the dependence on forces operating above and beyond human consciousness." (Rose, 2002: 457; see also Crang, 2009) Given this focus on agency, it is unsurprising that 'new' cultural geographers themselves turned to humanistic geographers, even as they were "sceptical of humanist geography's lack of interest in how and why places are produced" (Rose, 2002: 457).

However, Rose (2002: 458) identifies an unresolved tension latent in 'new' cultural geography. Although 'new' cultural geographers continuously emphasise that culture is a

“potentially open-ended symbolic context” in which individuals have agency, “what makes [culture] an actual entity—something that can be identified, categorised and described—is the fact that it is contained by ideologies grounded in systems of cultural dominance.” (Rose, 2002: 458; see also Mitchell, 1995) To make the objects of ‘new’ cultural geography legible, structure must supersede agency. As Rose (2002: 459) highlights with respect to landscape,

while struggle [over dominant representations of landscape] is always present in the landscape, it is ultimately the forces of limitation and control, rather than those of interpretation and resistance, that define what culture or the cultural landscape is. [...] Thus, while agency is valorised in cultural geography, because it destabilises and disrupts, it never itself makes the blue-print—or if it does it is only when it becomes the dominant. This is the dilemma at the heart of cultural geography: on the one hand the landscape is a cultural symbol that can be diversely interpreted and on the other it is a stable image whose existence depends on its interpretation being contained. [...] Thus while the landscape is described in terms of struggle it is defined in terms of structure. The landscape owes its existence to being read in a consistent fashion.

According to Rose (2002: 459), this tension between structure and agency points to a

fundamental problem in cultural geography, landscape studies and the structural humanist understanding of culture they both rely on: there is no account of how representation works. How do the repeated rules, values, norms and ideas that are signified through the landscape themselves engender social consistency?

In “attempting to conceptualise representations [such as landscape, MH] as having the capacity to structure thought” (Rose, 2002: 460), ‘new’ cultural geography forgoes an account of how the representations themselves are rendered coherent.

Rose (2002: 461) attempts to provide an answer to this question by drawing on Bataille’s work. Although Bataille himself is not part of the phenomenological tradition, his line of reasoning concerning the nature of practice points to a phenomenological question previously raised in relation to Pickles’ account of Heideggerian phenomenology. In Rose’s (2002: 461) rendering, Bataille challenges a conception of practice according to which “all practice can be explained in relation to other practices”, rendering all acts “purposeful and strategic” (Rose, 2002: 461) within a set of practices. “Thus practice, in the restricted sense, is always reactive. It operates within an enclosed system of functionality” (Rose, 2002: 461) or, to use Heidegger’s term, a referral nexus of significance. Much like a phenomenological account based on

Heidegger's approach renders 'nature', i.e. that which is in excess of the referral nexus of significance invisible, so too does "limiting practice to a series of functional *responses*" render invisible "the influence of forces operating outside what can be productively account for." (Rose, 2002: 461)

This focus on what is in excess of practices or the referral nexus of significance is of import for Rose because his account of landscape is "an attempt to provide an account of coherence that relies on excess." (Rose, 2002: 465) Instead of reading landscape as a text, trying to uncover its meaning "seemingly encoded by powerful agents" (Rose, 2002: 465), Rose views landscape as something which

emerges from the process of struggle itself. As various systems of care surround the landscape they call it forth differently. Thus conflict is simply the working out of the landscapes being in the world.

Instead of reifying a landscape's meaning and structure at the expense of agency, Rose calls for attention to how landscapes are in excess, how they lie beyond any single meaning, practice or frame of reference whilst relying on agency to be called forth in different ways (on climate in excess, see also Section 2.5).

5.1.4.2 Beyond phenomenology

This awareness of and attention to that which exceeds meaning, evident in Rose's account of landscape, is characteristic of the broader engagement with phenomenology to follow. Phenomenology promises to offer an account of *how* the process of 'representation'—turning excess into distinct understandings of landscape—takes place.

In his narrative account of a single day's walk on the South West Coast Path, Wylie (2005) reflects on Ingold's (1993) phenomenological account of landscape as a place of dwelling. "In this context," Wylie (2005: 240) notes with reference to Rose (2002) that whilst "walking would appear, at least superficially, to have some affinity with the everydayness of being-in-the-world: rhythmic, practical absorption", experiences of walking reveal that walking "cannot be described as being in some unmediated relation of corporeal circumspection".

If one accepts Ingold's distinct pragmatic Heideggerian rendering of phenomenology (Ingold, 2002: 154), then walking can only partially be accounted for phenomenologically, given that experiences of walking consist of both embodied immersion and "gazing, contemplating or navigating." (Wylie, 2005: 240) In Wylie's (2005: 240) assessment, although

the “recent re-discovery of phenomenological modes of understanding offers a corrective to the sometimes structuralist readings proffered by new cultural geographies”, one must equally be wary of the fact that “accounts of landscape-as-dwelling run the risk of presenting subjects and landscapes always already conjoined”. In contradistinction to this dwelling-perspective, Wylie (2005: 240) argues that “a constitutive sense of self” is not simply “suspended or placed beneath a threshold of awareness when one is intensely environmentally involved”. Instead, a “distinctive sense of self emerges and is maintained” through our struggle in *and against* a landscape, “when one is thrashing through ferns, brambles, mud, rocks” (Wylie, 2005: 240).

Following the phenomenological work of Lingis (1998), Wylie (2005: 242) emphasises that a landscape’s meaning does not somehow emanate out of subjectivity, but conversely that “[s]ubjectivity arises in the course of perceptual processes as a vector of response to exteriorities—to encountered others, to sights and sounds, to both textures and intangibilities”, i.e. to that which is in excess of subjectivity. Filling out geographical phenomenology’s blind-spot, Wylie emphasises the interrelated nature of subject and object in experience: “Landscape is neither something seen, nor a way of seeing, but rather the materialities and sensibilities *with which* we see” (Wylie, 2005: 243).

In the conclusion to this article, Wylie (2005: 245) gives a consequential name to the project he is pursuing:

Taking a first step past constructivist, realist and phenomenological visions, this paper writes its way through what might be termed a *post-phenomenological* understanding of the formation and undoing of self and landscape in practice. (Wylie, 2005: 245, emphasis MH)

Wylie (2005: 245) here is charting a line of inquiry that questions the assumptions behind ‘new’ cultural geography (landscapes as “projection[s] of cultural meaning”), naïve realism (landscapes as “simply something seen”), and a narrow phenomenological concern for landscapes as a place of dwelling. However, by calling his approach ‘post-phenomenological’, Wylie renders all of phenomenology suspect, even as he himself continues to draw on the work of phenomenologists such as Merleau-Ponty ([1964] 1968) and Lingis (1998).

In a later paper, Wylie (2006: 520) goes on to develop a more detailed “post phenomenological account of visual self-landscape relations.” His renewed critique of Ingold’s phenomenological approach to landscape reveals the underlying reason for his call to *post* phenomenology:

in conceiving of the dwelling body–subject as an attuned accumulation of environmental aptitudes, Ingold’s writing to an extent shares the well-known problems of classical phenomenology. In particular [...] it shares the intentionalist sense that the lived body possesses ‘natural’ capacities to synthesise, polarise, and organise the perceptual field. Thus there occurs in Ingold’s work a partial reintroduction of the intentional subject that so much post-structural theory has sought to disassemble. In other words, Ingold’s work perhaps remains paradoxically too subject-centred insofar as it tends to replace a detached meaning–bestowing ‘cultural’ mind with an active, sturdy, and involved dwelling body. Such a manoeuvre reprises the problems of existential phenomenology in that it continues to assume that experience is *given to* a pregiven subject [...]. In this sense, although Ingold’s account of landscape as the ‘taskscape’ of dwelling does reimmerse the cultural in the natural, and reanimate landscape in terms of embodied practice and performance, the trace of a constituting, perceiving subjectivity remains. (Wylie, 2006: 521)

In light of my earlier critique of geographical phenomenology, it is important to reflect on the exact meaning of “intentional subject” here, given that it forms the basis for Wylie’s dismissal of phenomenology as a theoretical paradigm for the research he is envisioning ‘beyond subjectivity’. Wylie might be right to critique Ingold on the limits of his dwelling-centred phenomenology of landscape. However, it would be wrong to generalise this subjectivist critique to phenomenology broadly speaking or even to Heideggerian phenomenology, on which Ingold’s account is based. As Sallis (1990) notes in his reading of *Being and Time*, “corporeal circumspection” (Wylie, 2005: 240) does not simply mean that we constitute, perceive, and interpret our surroundings one-sidedly. Instead, even in pre-reflective circumspection, we interpret ourselves *alongside* our surroundings: in interpreting them we also interpret ourselves, they ‘constitute’ us in much the same way that we ‘constitute’ them (Sallis, 1990: 63; for a more sustained critique of a pragmatist reading of Heidegger, see also Jeuk, 2022). Recalling Pickles’ warning two decades earlier,

If the seminal papers introducing phenomenology to the discipline distorted its nature, and subsequent discourse developed in terms of these claims, then the project itself, even where it goes beyond phenomenology, must be questioned. (Pickles, 1985: 6)

My central argument concerning this third parting of ways–post-phenomenology parting from phenomenology–is that it is, once more, premised on a distorted understanding of phenomenology itself. Without a clear sense of what it is moving beyond, *post*-phenomenology rests on a shaky foundation.

The impression that Wylie follows a geographical phenomenological understanding of intentionality is confirmed when Wylie (2006: 522) approvingly cites Merleau-Ponty's ([1964] 1968) later work as enabling a "significantly less intentionalist and less subject-centered phenomenology of landscape" (Wylie, 2006: 522). Giving an example of this 'less intentionalist' approach, Wylie writes

I cannot, for example, see this cup before me in its entirety, from all possible perspectives; indeed, it is only by admitting to my belongingness to the visible which surrounds and embraces me, by admitting to the displacement of 'my' vision, that I am open to the cup as a dimensional, fleshy, transcendent thing. It is both open and hidden to my gaze. (Wylie, 2006: 527)

To recognise the perspectival nature of perception means to recognise the *particular intentionality* of perception, namely that we can only ever see one side of an object, even as we remain conscious of the innumerable possible perspectives that would allow us to see the complete object. As Husserl ([1907] 1997) explains in *Thing and Space*,

Every perception of things is inadequate: the one at rest is already inadequate because it is merely one-sided, and the variable one because, while it does indeed gradually or in steps bring the object to many-sided and ever richer givenness, yet it never attains the goal of absolute givenness. (Husserl, [1907] 1997: §33, 96)

Restating his earlier approach, Wylie (2006: 533) summarises that

If there has been an opposition between culturalist understandings of landscape and the phenomenological definitions extended by Ingold (2001) then this paper moves beyond both registers towards a more sinuously poststructural, or more precisely, post-phenomenological, account. Rather than beginning from a structuralising concept of culture, as cultural geographies may have often done (see Rose, 2002), or from within Ingold's residually intentional subjectivity, I have illumined an immanent, processual topography anterior to both [through a reading of Deleuze, MH]. (Wylie, 2006: 533)

Although a more detailed account of Wylie's approach would have to engage more closely with his reading of Deleuze (and with Deleuze's reading of phenomenology), for the purposes of this chapter, I simply want to emphasise the recurrence of "intentional subjectivity", as though intentional means—to the phenomenologist—purposive or deliberate. Even the late "phenomenological ontology" of Merleau-Ponty Wylie (2006: 527) approvingly cites, as an

alternative to “a Cartesian spectatorial epistemology”, is premised on the correlational nature of experience, i.e. on subject and object being intertwined with each other. As Wylie (2006: 527) himself notes, the difficulty with building on Merleau-Ponty’s phenomenological ontology lies not so much in an unresolvable problem with phenomenology, but in the fact that

the analysis of *The Visible and The Invisible* is skeletal and abbreviated, undone by Merleau-Ponty’s death. [...] In one sense, a renewed phenomenology of perception remains to be distilled from the general ontology of *The Visible and the Invisible*. In another sense, a subject-centred phenomenology of perception is precisely what that ontology leads us away from. (Wylie, 2006: 527)

Instead of ‘renewing’ phenomenology, phenomenology is ‘posted’ by rendering it “subject-centred”. The relation between phenomenology and post-phenomenology is further confused when Anderson and Wylie (2009) go on to develop a ‘post-phenomenological’ account of materiality based—in part—on Merleau-Ponty’s work.

In a later chapter on (post-)phenomenological approaches to landscape, Rose and Wylie (2011: 221) more carefully highlight that

The question of human experience, however, is by no means a straight-forward matter and the notion that phenomenological approaches condone an uncritical or romantic subjectivism is a powerful misreading of contemporary phenomenological work.

Following the ideal of presuppositionlessness, a phenomenological approach questions the very distance between seer and seen assumed in cultural approaches to landscape which view it as “something produced for reading and interpretation.” (Rose and Wylie, 2011: 221; see also Ingold, 1993) Instead of keeping subject and object of landscape experiences apart, a phenomenological approach “allows us to explore this tension[—the tension between being intimate and distant, distinct from and yet embedded in—]more fully.” (Rose and Wylie, 2011: 222)

Offering a more careful definition of intentionality, Rose and Wylie (2011: 223) go on to note that for

Husserl all mental perceptions and states (whether they are perceptions of an object, idea, emotion, etc.) have their origin in some external property or source. Thus, there is always “something out there” that is the cause of our mental intentions (our perceptions, our judgments’, our hopes, our fears). This is not to say that we have certainty about what that source is. All we know is that there is something *there*. (Rose and Wylie, 2011: 224)

Unfortunately, there is no reckoning concerning how this understanding of intentionality, that “*the perceiving consciousness cannot be separated from the object of its perception*” (Rose and Wylie, 2011: 224), squares with the “well-known problems of classical phenomenology” (Wylie, 2006: 521) mentioned earlier.

In the final section of their chapter, Rose and Wylie (2011: 230-231) go on to clarify “the limits and limitations of current phenomenological work” which motivates their turn to post-phenomenology.

“Post-phenomenology” is an unwieldy phrase, but it does help to capture the sense of a movement from within phenomenologically-inspired geographies that seeks, in various ways, to move beyond what could be understood as “classically” phenomenological precepts and principles. At the heart of this is an unease with the central place accorded to the perceiving subject in the work of both Heidegger and Merleau-Ponty, and latter-day standard-bearers such as Tim Ingold. The risk, as we see it, is not that of lapsing into a voluntarist and agent-centered account of landscape, nor is it that landscape phenomenology might somehow overlook the role of power in shaping landscapes [...]. Rather it is the risk of overlooking, (a) the varied non-human agential forces and affectivities through which perception and sensation are emergent per se, and (b) the indelibly post-structural status of both subjects and landscapes as incomplete, incoherent, in actuality never-present-as-such—as, in truth, haunted and aporetic materialities. (Rose and Wylie, 2011: 230)

Arguably, as I highlighted in my discussion of geographical phenomenology, these risks are not so much related to phenomenology, but to subjectivist construals of phenomenology in geography. Attention to intentionality, to the interrelated nature of subject and object in consciousness, would, for instance, equally draw attention to how experience is shaped through the non-human and to how neither subject nor object are complete, but continuously open to renegotiation (Hepach, 2021). An example of the former is Merleau-Ponty’s account of how “we only grasp the unity of our body in the unity of the thing, and only by beginning with things do our hands, our eyes, and all of our sense organs appear to us as interchangeable instruments.” (Merleau-Ponty, [1945] 2012: 336)

Concerning the latter point, Waldenfels notes, reflecting on the nature of intentionality, that there is a “significant difference” (Waldenfels, 1997: 19, translation MH) between *what* is experienced and *how* it is experienced which allows us to experience something *as* something. Put differently, intentionality most simply means that something appears “this way and not

differently” (Waldenfels, 1997: 20, translation MH). Reflecting on this basic fact of intentionality, one may recognise that the very structure of intentionality is porous (Merleau-Ponty, [1964] 1968: 149), always already exposed and “entangled in a heterogeneous logic of difference.” (Anderson and Wylie, 2009: 319)

5.1.4.3 Parting of ways III: Post-phenomenology

Much like geographical phenomenology, post-phenomenology has gained “a certain independent momentum” (Pickles, 1985: 71). In their review paper, Ash and Simpson note that

post-phenomenology is not about abandoning the key insights of phenomenology. Instead it is about *refiguring* and *expanding* phenomenology’s analytic and conceptual boundaries. It is about exploring what Quentin Meillassoux (2009) [sic] terms ‘the great outdoors’ – an excessive world that lies outside of the human-environment correlate but which is central to shaping human capacities, relations and experiences. (Ash and Simpson, 2016: 63, emphasis MH)

However, it is difficult to square this conciliatory tone with the stark critique of phenomenology’s most basic concept: intentionality. If “the post-phenomenology emerging thus far in geography can be taken most simply to be the development of a phenomenology beyond intentionality” (Ash and Simpson, 2016: 53-54), then what is left of phenomenology in post-phenomenology?

The critique of intentionality is central to post-phenomenology in that it constitutes a “major point of cohesion” between different post-phenomenological approaches which otherwise “emerge from a variety of intellectual traditions and in many cases utilize different onto-epistemological assumptions about the world that by no means fully coincide.” (Ash and Simpson, 2016: 62) In spite of their differences, said approaches share a “commitment to overcoming the human-world, subject-object correlate and, in doing so, unsettling the *intentional correlate of experience*.” (Ash and Simpson, 2016: 62, emphasis MH)

This point of cohesion detailed by Ash and Simpson brings to light a further central concept that is critiqued by post-phenomenology: correlationism. Phenomenology’s correlationism has most prominently been called into question by Meillassoux in his book *After Finitude*, where he defines correlationism as

the idea according to which we only ever have access to the correlation between thinking and being, and never to either term considered apart from the other. We will henceforth

call *correlationism* any current of thought which maintains the unsurpassable character of the correlation so defined. (Meillassoux, [2006] 2008: 5)

The allure of post-phenomenological inquiry and its critique of correlationism and intentionality is hence to break free from this “correlationist circle” (Meillassoux, [2006] 2008: 5), “to access a great outdoors” (Meillassoux, [2006] 2008: 50), “a behind-the-scenes world” (Zahavi, 2018: 14), “an excessive world that lies outside of the human-environment correlate but which is central to shaping human capacities, relations and experiences.” (Ash and Simpson, 2016: 63)

Overcoming correlationism faces two key challenges: (i) How do we break free from the constraints of intentionality and correlationism? (ii) Having ‘broken free’, how do we account for how the “excessive world that lies outside” shapes “human capacities, relations and experiences” (Ash and Simpson, 2016: 63), when these human capacities, relations, and experiences are themselves characterised by intentionality? For the phenomenologist, breaking free from such constraints is impossible because they are what make any meaningful understanding of reality possible, as I argued in my earlier definition of intentionality in Section 5.1.1.1.

Ultimately, the post-phenomenological approach outlined by Ash and Simpson rests on the rejection of an account of intentionality which is, at best, one-sided. According to Ash and Simpson, intentionality

relates to the proposition that an experience is an experience of something—we are always looking at something, listening to something, thinking about something, and so on. This ‘aboutness’ implicates the presence of an intentional subject *in advance of experience*. For experience to be ‘about’ something, there has to be an *author* of this aboutness and a point from which the directedness of the experience comes. This notion of intentionality is then closely tied to a particular conception of subjectivity whereby the subject *governs* through ‘internal representational thought’ (Rose, 2006: 546). (Ash and Simpson, 2016: 53, emphasis MH)

With this understanding of intentionality, we have returned back to Relph’s geographical phenomenological square one.

Fortunately, more recent literature has followed in the path of Billinge (1977) and Pickles (1985) to point out that this “is the moment in which ‘intentionality’ morphs, without explanation, into ‘intentional subject’” (Kinkaid, 2020: 9); it “remains unclear what this subject has to do with phenomenology and the concept of intentionality.” (Kinkaid, 2020: 9)

5.2 The spatiality of experience

In the previous section, I outlined three distinct engagements with phenomenology in geography. To those familiar with recent work in cultural geography on (affective) atmospheres, one phenomenological approach in geography is conspicuously absent from my retelling: ‘new’ phenomenology (Gandy, 2017: 357; Schmitz, 2019).

I have left a discussion of ‘new’ phenomenology and atmospheres to the end as it relates most closely to my own account of what some might consider an atmospheric phenomenon: climate. Hence, the question arises why not base a phenomenology of climate on the work of ‘new’ phenomenology’s founder, Schmitz et al. (2011; 2016), and the later work on atmospheres by Böhme (1993; 2016) as other, phenomenologically inclined cultural geographer’s of atmosphere have done (Anderson, 2009; Edensor, 2012; Adey, 2014; for an engagement with ‘new’ phenomenology in German geography, see also Hasse, 2012; Hasse, 2015; Hasse, 2017; for a more extensive discussion of ‘new’ phenomenology and geography, see also Gandy, 2017; McCormack, 2018: 223, fn 14)?

The answer to this question requires a brief reflection on two phenomenologies of spatiality—one by Schmitz, another by Figal—, and their relation to intentionality and the phenomenological correlation. As my account of post-phenomenology in human geography already showed, the ‘problem’ of intentionality and correlationism is closely related to the question of spatiality; to the possibility of a ‘space’ set apart from human subjectivity.

5.2.1 ‘New’ phenomenology of atmospheres

Schmitz (2016: 5) develops his concept of atmosphere—“a total or partial, but in any case comprehensive, occupation of any area-less space in the sphere of that which is experienced as being present”—as a necessary part of a “phenomenology of spatiality”. Schmitz’s focus on spatiality, and atmospheres in particular, is closely linked to his critique of intentionality. As Andermann explains, Schmitz’s overall project to “radically incorporate subjectivity in an exteriority” (Andermann, 2007: 44, translation MH) is a response to the Husserlian, intentionalist “*dogma of the inner world*” (Andermann, 2007: 45, translation MH). According to this dogma, inner and outer world are ‘mysteriously’ interrelated, requiring the concept of intentionality to bridge the distance between subjectivity and objectivity. The danger intentionality presents is rendering invisible anything which cannot be bound to intentional acts, to a subject relating to an object (Andermann, 2007: 46).

One phenomenon where this danger turns acute are emotions. Schmitz develops an account

of “the space of emotions as atmospheres” (Schmitz, 2016: 3) to counteract an intentionalist account of emotions, which might locate emotions inside a subject (see also Schmitz et al., 2011). The advantage of a spatial or atmospheric account of emotions is evident in Schmitz’s (2016: 5) discussion of “the social contrast of emotions”, such as when “a person who is feeling joyful finds himself inadvertently in the company of deeply sorrowful people who are immersed in their sorrow.” To make sense of this situation—of how emotions become palpable, spill over, take up (area-less) space and shape how one behaves, feels, and thinks with immediacy—, emotions are best conceptualised as atmospheres, and not as ‘internal feeling states’ mysteriously related to an outside world.

According to Schmitz, intentionality is not only unable to account for affective atmospheres, but also for what one might call ‘physical’ atmospheres, such as climate:

That the climate of nature—the so-called weather—or the inside of a built room is warm or cold, humid or dry, that the atmosphere is stuffy or clear is something which we notice with striking, immediate certainty [...]. (Schmitz, 1968: 12, translation MH)

We do not infer a climate through a reflection on what we experience (Schmitz, 1968: 13). An experience of climate is not “an intentional act in the sense of perception as perception of something, but we experience it in the sense of a vibration of the bodily condition in connection with the outside.” (Andermann, 2007: 261) Experiences of climate, like experiences of emotions, are immediate *and* ‘outside’ oneself. Following Schmitz’s line of argument, they escape a phenomenological approach restricted by concepts such as intentionality and correlationism.

5.2.2 The space of phenomenology

In line with Schmitz’s approach, Figal agrees that a phenomenological analysis of experience does not support the thesis that we are somehow trapped within ourselves, relating to the outside world in mysterious ways:

Oneself, as the living being that one is, cannot be [...] an inside. For that to be the case, one would have to be able to be ‘inside’ oneself, and then one would be a room for oneself. But oneself is, simply from the perspective of oneself, always outside, in an outside that does not stand in contrast to some inside [...]. It is this limitless outside which is limited by a given room one is in. And only through such limitation can one be ‘inside’. (Figal, 2016: 211, translation MH)

But where Schmitz sought to move beyond intentionality and correlationism to account for the spatiality of experience, Figal locates spatiality at the very heart of the phenomenological correlation.

Instead of positing area-less spaces outside the phenomenological correlation, and incurring the epistemological problems Zahavi highlighted above, Figal argues that the phenomenological correlation is itself spatial: “it is only possible as a possibility of space.” (Figal, 2016: 73).

Figal’s approach is a response to the problem phenomenological accounts face highlighted in my definition of intentionality: phenomena are unitary, but their unity can only be understood correlationally, i.e. as a duality which contradicts the phenomena’s unity. Attempts to resolve this duality in favour of a ‘true’ unity have ended, as Buttner (1976: 282) observed, in various forms of “absolute truth”.

Figal observes that aside from the subjective and objective, the phenomenological correlation is also defined by distinct possibilities of the subjective and objective correlating. According to Figal, these possibilities are spatial in nature.

Spatiality coheres the subjective and objective in experience in virtue of affording both *how* and *what* we experience simultaneously. As Figal (2016: 76) details with respect to *how* I experience, everything I experience is (i) *there* and not here, from where I experience, my experience is (ii) *open* in that it is not fixated on a single object or way of experiencing and (iii) the object of my experience always remains at a *distance* no matter how near I draw. With respect to my object of experience, Figal (2016: 76) explains that everything I experience has (i) its *place*, where it is (ii) *open* to be experienced (iii) at a *distance* from others. Possibilities of space, (me/the object) being (i) somewhere (ii) open for experience (iii) at a distance, tie together subject and object in distinct ways whilst keeping them apart (see also Figure 25). Spatiality offers a principle for the unity of the phenomenological correlation; a unity in difference.

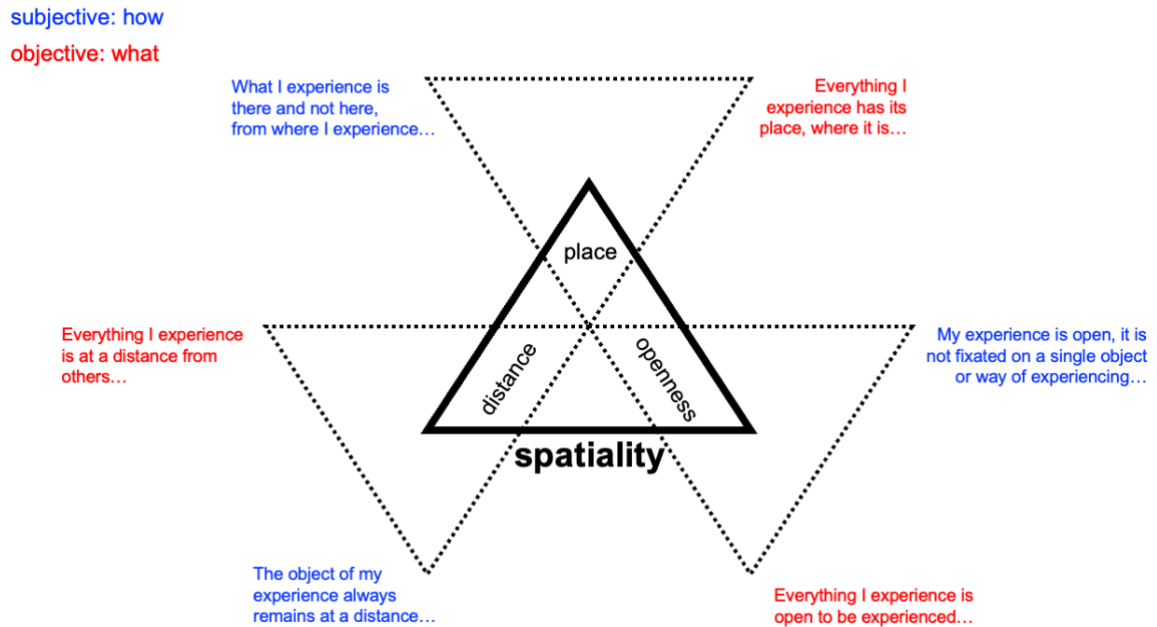


Figure 25: My representation of Figal's concept of the spatial nature of the phenomenological correlation.

Figal provides phenomenological evidence for his phenomenology of spatiality by turning to experiences of built spaces: rooms. “To be in a room,” Figal writes, “means: to see, to hear or to feel what this room makes visible, audible or palpable. Room limits experience by admitting or foreclosing certain limited possibilities of experience.” (Figal, 2016: 210, translation MH) In line with Schmitz's observation with respect to atmospheres, Figal observes that rooms “are not phenomena like things, living beings or persons. They do not jut or stand out, they do not stand in front or in opposition to us. Rooms are, put differently, immaterial [ungegenständlich]; one never finds oneself opposite a room, but always in one.” (Figal, 2016: 19, translation MH) But they are not, to use an awkward phrase coined by Schmitz and his followers, ‘half-things’ or ‘quasi-things’ either (Schmitz, 2014; Griffero, 2017).

Instead of abandoning correlationism, to account for the phenomenological reality of rooms one must reflect on the fact that they resemble possibilities of spatiality: Rooms are “limited and therein definite possibilities” (Figal, 2016: 220, translation MH) of correlating the subjective and objective in experience. Rooms in particular, and spatiality in general, shape both *what* I experience and *how* I experience according to a common denominator which guarantees the unity of the phenomenological correlation.

To study spatial phenomena—rooms, atmospheres, climates—requires a reflection on the correlational nature of experience. The immediacy of spatial experience—of rooms, atmospheres, and climates—can then be explained by conceptualising them as neither something

subjective, nor as something objective, nor as an atmosphere somewhere 'out there' in which we somehow participate. Instead, their immediacy can be accounted for by recognising that they are correlational: they cohere subjectivity and objectivity in distinct ways and are hence prior to reflection.

5.3 A phenomenology of climate

The brief overview of four different phases of engagement with phenomenology in human geography serves as a backdrop to the phenomenological account I will now offer. Relating to each phase, my approach will not (i) restrict itself to the mere description of subjective experience, nor will I (ii) narrowly follow Pickles' path grounding geography in Heideggerian phenomenology, and neither will I (iii/iv) abandon phenomenology in favour of an ill-defined new paradigm. Instead, I will reevaluate the usefulness of the foundational concepts of phenomenology—intentionality and correlationism—for geographical theory by subjecting Husserlian phenomenology to a close reading. My discussion of Husserl concludes with a phenomenological account of climate and its changes, which links back to the phenomenology of spatiality sketched out by Figal above.

Raising awareness of the short-comings of previous approaches to phenomenology in geography was of particular importance for my phenomenological account of climate because, as I will now argue in more detail, climate's experiential reality is located in the space between subject and object rendered invisible by the different ways phenomenology has been (mis-)understood in geography.

With regard to (i) geographical phenomenology, the overemphasis on subjectivity renders climate invisible as a shared reality, as a physical, non-human force. Following (ii) Pickles, the emphasis on Heidegger's work would restrict an account of climate to the role climate plays in our referral nexus of significance, occluding the ways in which climate exceeds and makes our being-in-the-world possible (for this reason, I also forgo a detailed discussion of place-related work in phenomenology by Tilley (1994), Casey (2009), Malpas (2012), and Seamon (2018)). Although (iii/iv) 'new' and post-phenomenology pay particular attention to that which exceeds 'subjectivity', abandoning intentionality completely in favour of some 'great outdoors' obscures the ways in which subject and object are entangled in climate; the way in which climate is inherently correlational. To get climate's reality into view requires a phenomenological approach that pays particular attention to the *tension* between subject and object, instead of hastily resolving this tension in favour of one 'end' of the correlation between subject and object, in favour of subjective experience or some diffuse atmosphere (see also the attention paid to this tension in Section 3.4 with respect to Goethe's and Sauer's concept of form, in Section 4.4 with respect to Plato's climate-concept, and in Section 4.5.3 with respect to Aristotle's account of being-at-work).

5.3.1 Why Husserl?

An attempt to sketch out possible new trajectories of phenomenology in geography could start from innumerable different phenomenological thinkers and their texts. I have chosen to re-engage with Husserl's work *The crisis of European sciences and transcendental phenomenology: an introduction to phenomenological philosophy* (henceforth *Crisis*) for several reasons which relate closely to the overall scope and argument of this thesis.

(i) In the *Crisis*, Husserl develops an introductory account to phenomenological theory through a critique of scientific rationality. Broadly speaking, Husserl calls for a return to the study of experience in order to clarify the origins of natural science and what science seeks to explain. Analogously, I have argued through-out this thesis for a return to experience to understand the (conceptual) origin and nature of climate and its changes. The gap between science and experience, what Husserl identifies as the origin of the 'crisis', leads to crisis in climate science too: How do our models and predictions relate to present and future experiences of climate change? Studying the nature of *science* with the help of phenomenological theory is a method rarely considered by geographers; perhaps because phenomenology has historically been viewed as an *alternative* to science in geography.

(ii) Husserl's work has played a central role in the constitution of geographical phenomenology and post-phenomenology. From Husserl, geographical phenomenologists borrow the concept of the 'life-world'. Phenomenology is then taken to be the study of the life-world which, according to the paradigm of geographical phenomenology, means studying subjective experience as opposed to the positivist 'truths' of science. As my discussion will show, Husserl did not argue against science in favour of subjectivism or humanism: he instead tried to develop a scientific approach adequate to understanding both subjective experience and science, as well as their interrelation. Irrespective of the ambiguity that surrounds what post-phenomenology is and when it began, Husserl is the lowest common denominator of post-phenomenological critique: the "post-phenomenological line can be seen throughout the history of phenomenology *after* Husserl." (Ash and Simpson, 2016: 56, emphasis MH) Through a re-reading of the *Crisis*, in which I pay particular attention to Husserl's emphasis on the correlational nature of consciousness and experience, to the entanglement of subject and object, I aim to argue against too easy dismissals of Husserl, intentionality, and correlationism, outlining another possible phenomenological road-not-taken.

(iii) Through a reconstruction of the phenomenological approach of the *Crisis*, I provide an example of how to bring the experiential reality of climate and its changes into view. I show

how Husserl's work allows us to look beyond subjectivity, raising awareness of the ways in which our experience and existence are embedded in a world which shapes subjectivity, as opposed to being a product of it. Husserlian phenomenology, I conclude, helps bring into view what changes with climate change.

5.3.2 Climate: a hyperobject?

Returning to the outset of my argument in Chapter 2, a phenomenological approach to climate is faced with the problem that climate is not an immediate object of perception. For this reason, much of this thesis has been dedicated to unearthing climate as an object of phenomenological study.

As Rudiak-Gould (2013: 121) explains in his account of the epistemological paradigm underlying climate science, “the gulf between brute, visible reality and climate change is crowded with arcane mathematics, high-tech measuring devices, and inhumanly large temporal and spatial scales.” Drawing on Horn's (2018) and Edward's (2010) work in Section 3.5.4, I argued that climate science

created a conception of climate that is entirely abstract, standardised, and computable. Climate has become an object outside the range of human experience, everyday life, and social and cultural practices—an external scientific object [...]. (Horn, 2018: 15)

Following this scientific understanding of climate, Morton (2013) has—influentially—called climate a *hyperobject*, i.e. something that exceeds human experience (see also Boulton, 2016). Morton (2013: 12, see also 101) identifies a “rift between weather, which I can feel falling on my head, and global climate [...]. I can think and compute climate in this sense, but I can't directly see or touch it.” However, this rift (or dichotomy) between weather we experience and climate we do not is not as clear cut as it may first appear, as Morton's own account demonstrates.

When you feel raindrops, you are experiencing climate, in some sense. In particular you are experiencing the climate change known as global warming. But you are never directly experiencing global warming as such. (Morton, 2013: 48, see also 74-76, 104).

I highlight Morton's work in particular because it marks the confluence of both a philosophical engagement with climate (change) and a critique of phenomenology. Morton's philosophical approach has been cited approvingly by post-phenomenologists in geography for his

contribution to object-oriented ontology (Ash and Simpson, 2016: 46; for a notable critique of Morton from within post-phenomenology, see also McCormack, 2017).

The passage cited above, highlighting the rift between weather and global climate, comes after a brief engagement with Husserl's work:

Around 1900 Edmund Husserl discovered something strange about objects. No matter how many times you turned around a coin, you never saw the other side as the other side. The coin had a dark side that was seemingly irreducible. This irreducibility could easily apply to the ways in which another object, say a speck of dust, interacted with the coin. If you thought this through a little more, you saw that all objects were in some sense irreducibly withdrawn. Yet this made no sense, since we encounter them every waking moment. And this strange dark side applied equally to the "intentional objects" commonly known as thoughts, a weird confirmation of the Kantian gap between phenomenon and thing. (Morton, 2013: 11)

Aside from the fact that "intentional objects" are not identical to thoughts, as I discussed above at length, Morton draws a unique lesson from Husserl's phenomenological insight: Instead of accounting for how subject and object are correlated in experience, an object-oriented ontological approach attempts to conceptualise the being of objects set apart from human experience or, to use a concept introduced earlier, beyond/outside the "human-environment correlate". Hence the objects of this approach are 'hyper'.

Zahavi (2016) has offered a detailed response to attempts by object-oriented ontologists and speculative realists to 'end phenomenology' (Meillassoux, [2006] 2008; Sparrow, 2014; Harman, 2018). In a later work, previously discussed in Section 5.1.1.1, Zahavi (2018) offers a defence of intentionality and correlationism on the grounds that any "understanding of reality is by definition perspectival. Effacing our perspective does not bring us any closer to the world. It merely prevents us from understanding anything about the world at all." (Zahavi, 2018: 28)

Conceptualising climate as a hyperobject relies on the assumption that climate science offers us a 'more real' access to reality beyond the perspectival nature of experience. Following this logic, climate that we model is more real than weather we experience. However, where absence is said to haunt the "metaphysics of presence that underpins phenomenological accounts of experience" (Rose, 2006; Wylie, 2009; McCormack, 2017: 4), the inevitable presence of subjectivity comes to haunt Morton's account too. As McCormack (2017: 5) notes,

Morton's analysis turns around questions of scale and moreover, because the entities with which he is concerned are massively distributed in relation to the perspective of the

human, the ghost of human perspectivalism he finds so problematic remains at the centre of his analysis.

Subjectivity haunts Morton's account in another sense: scientific investigation is as much subject to intentionality as experience is, as Husserl will later be at pains to explain.

In his discussion of "Whole Earth Measurements", Ihde (1999: 50) poses the provocative question: "How Many Phenomenologists Does It Take to Detect a 'Greenhouse Effect'?" From Morton's point of view, the Greenhouse Effect is part of the hyperobject climate, unavailable to human experience. "CFCs, CO₂, and ozone" (Ihde, 1999: 53) are not available to immediate perception. However, as Ihde argues, if you look at *how* the Greenhouse Effect is detected, of course human experience plays a role. The Greenhouse Effect may not be directly experienced, but it is "*mediated and instrumentally real*" through the "technological extension of bodily perception" (Ihde, 1999: 53), i.e. it is subject to intentionality. I briefly highlight Ihde's (1990; 1995) work here because he himself has called his approach 'postphenomenology'. Consequently, it has been approvingly cited by post-phenomenologists in geography (Ash, 2020). However, if post-phenomenology is about moving beyond intentionality, then Ihde pursues a very different project.

By moving 'beyond intentionality', by hypostatizing climate as a hyperobject, the conditions of possibility that make scientific knowledge of climate possible are rendered invisible. How do we come to know climate as a hyperobject or otherwise? How can one experience climate 'in one sense', but not in another? As I highlighted in Chapter 2, these questions arising from Morton's account arise in much the same in the wider discourse around experiencing climate and its changes with relation to climate projections and weather attribution studies. Fortunately, what science means to us and how it relates to experience are precisely the questions Husserl tackles in the *Crisis*.

5.3.3 The crisis of (climate) science

As the title of his 1936 work suggests, Husserl diagnoses a crisis in the (natural or physical) sciences of his time. The first chapter of the *Crisis* pre-empts the initial thought that might occur when one suggests the sciences—both past and present—are in crisis: How can they be in crisis when the sciences are so successful, when they set the very standard of "scientific rigour" (Husserl, [1936] 1936: §1, 4) philosophy, in particular, fails to achieve?

Husserl ([1936] 1936: §2, 5) suggests that a first sign that the sciences are in crisis relates

not to “the scientific character of the sciences but rather what they, or what science in general, had meant and could mean for human existence.” In Husserl’s ([1936] 1936: §2, 6) estimation, what science can be has been narrowed down to a very particular understanding of science, leading to “an indifferent turning-away from the questions which are decisive for a genuine humanity”.

Similar to Humanistic geography’s foundational claim, Husserl ([1936] 1936: §3, 7) is hence critical of the “*sort* of objectivity which dominates our positive sciences”, which forms “the basis for the support and widespread acceptance of a philosophical and ideological positivism.” In short, Husserl ([1936] 1936: §3, 7) calls into question the “positivistic restriction of the idea of science.” Humanistic geographers might go on to agree with Husserl’s ([1936] 1936: §2, 6) observation that “[m]erely fact-minded sciences make merely fact-minded people.” (See also Pickles, 1985: 107-111)

However, in contradistinction to Tuan’s and Relph’s work discussed in Section 5.1.2, Husserl does not view the study of subjective experience and ‘meaning-making’ as an alternative to science. Instead, throughout the *Crisis*, Husserl will attempt to free science from positivism, arguing that another scientific approach to reality, another ‘sort of objectivity’ is possible. The principal approach which guides the opening chapters of the *Crisis* does not turn away from positivist science. Instead, it seeks to reflect on the conditions of possibility of positivist science: How did positivist science arrive at its objectivity? This line of questioning “does not encroach upon the theoretical and practical successes of the special sciences; yet it shakes to the foundations the whole meaning of their truth.” (Husserl, [1936] 1936: §5, 12)

5.3.3.1 *Science of the ideal*

Husserl’s study is, in a first instance, historical. He traces the origins of positivist science back to the “completely new idea of *mathematical natural science*—Galilean science” (Husserl, [1936] 1936: §8, 22-23). According to Husserl, what was “new, unprecedented” about this approach to science was that it conceived

of this idea of a rational infinite totality of being with a rational science systematically mastering it. An infinite world, here a world of idealities, is conceived, not as one whose objects become accessible to our knowledge singly, imperfectly, and as it were accidentally, but as one which is attained by a rational, systematically coherent method. In the infinite progression of this method, every object is ultimately attained according to its full being-in-itself [...]. (Husserl, [1936] 1936: §8, 22)

In short, the key conceptual innovation of Galilean science was the introduction of objects that are at once infinitely removed from our conceptual grasp but nonetheless constitute possible objects of scientific study: idealities.

Reflecting on the deeper historical and experiential origins of this turn to ideality, Husserl ([1936] 1936: §9, 23) first observes that historically, for “Platonism, the real had a more or less perfect methexis in the ideal”. *Methexis* is the Ancient Greek term for the ‘participation’ of the empirical objects of our experience in the ideal realm of forms. As my phenomenological discussion of Plato in Chapter 4 evidenced, this ‘theory of forms’ is but one possible interpretation of Plato’s thoughts (on the relationship between Platonism and phenomenology, see also Arnold, 2017). However, ‘Platonism’ acts as a helpful foil to understand the innovation of Galilean science: instead of the realm of the real and ideal somehow being mysteriously interrelated, “Galileo’s *mathematization of nature* [...] idealized [*nature itself*]” (Husserl, [1936] 1936: §9, 23); it substituted the realm of experience for the realm of idealities.

In everyday experience, ideality is anticipated in the fact that although “[p]rescientifically, in everyday sense-experience, the world is given in a subjectively relative way”, this does not lead us to “think that, because of this, there are many worlds. Necessarily, we believe in the world, whose things only appear to us differently but are the same.” (Husserl, [1936] 1936: §9, 23) What remains a belief in experience is rendered objectively known through the idealisation of the world we share.

Husserl ([1936] 1936: §9, 26) goes on to call the idealities Galilean science studies “limit-shapes”. Borrowing the concept of ‘limit’ from mathematics, Husserl here emphasises that the objects of Galilean science are never actually arrived at. Instead, the study of an ideality or a limit-shape is characterised by *tending toward* an ideal or limit without ever reaching it. Even as science draws ever closer, its object of study remains infinitely removed.

These ideal limit-shapes allow scientists to achieve what remains impossible in the strictly empirical realm: “exactness” (Husserl, [1936] 1936: §9, 27). Imagining what Galileo might have said to himself upon this discovery, Husserl writes

Wherever such a methodology is developed, there we have also overcome the relativity of subjective interpretations which is, after all, essential to the empirically intuited world. For in this manner we attain an identical, nonrelative truth of which everyone who can understand and use this method can convince himself. Here, then, we recognize something that truly is—though only in the form of a constantly increasing approximation [...]. (Husserl, [1936] 1936: §9, 29)

5.3.3.2 The “garb of ideas”

Having outlined the tenants of Galilean science in abstract, Husserl traces the success of this approach of science back to not only the idealisation of nature, but to the way in which this *process* or *method* of idealisation has been rendered invisible and, as consequence, has been taken for granted. The limit-shapes themselves

become acquired tools that can be used habitually and can always be applied to something new—an infinite and yet self-enclosed world of ideal objects as a field for study. Like all cultural acquisitions which arise out of human accomplishment, they remain objectively knowable and available without requiring that the formulation of their meaning be repeatedly and explicitly renewed. (Husserl, [1936] 1936: §9, 26)

According to Husserl ([1936] 1936: §9, 47), the specific methodology of Galilean science took on “the character of an *unquestioned tradition*”, leading to

the surreptitious substitution of the mathematically substructured world of idealities for the only real world, the one that is actually given through perception, that is ever experienced and experienceable—our everyday life-world. (Husserl, [1936] 1936: §9, 48-49)

At this point in Husserl’s argument, the crisis of science comes into play. The Galilean approach to science not only changed the nature of scientific work, but the nature of our (in Husserl’s case the ‘European’) relationship to the life-world. As Husserl ([1936] 1936: §9, 51) explains, through “natural-scientific mathematization [...], we measure the life-world—the world constantly given to us as actual in our concrete world-life—for a well-fitting *garb of ideas*, that of the so-called objectively scientific truths.” Having represented, cloaked or ‘dressed up’ our life-world in this way, we “obtain possibilities of predicting concrete occurrences in the intuitively given lifeworld” in a way that “infinitely surpasses the accomplishment of everyday prediction.” (Husserl, [1936] 1936: §9, 51) This is another condition for the sustained success of the sciences.

Much in the same way that the Galilean approach took on the character of an “unquestioned tradition” within the sciences, Husserl argues that the “garb of ideas”, which veils the everyday life-world of experience, has itself taken on the character of a self-evident truth. “The lifeworld of the modern world is a lifeworld suffused with the thinking and products of science.” (Pickles, 1985: 116) Instead of viewing science as a particular method with its corresponding ‘sort of objectivity’, the “garb of ideas” leads one to “take for *true being* what is actually a *method*” (Husserl, [1936] 1936: §9, 51).

What might seem like a sophisticated approach to the nature of reality is, in Husserl's mind, on one level simply *naïve*, because it remains unaware of how method is mistaken for being. A true scientific approach, which Husserl goes on to develop throughout the *Crisis*, would clarify the meaning of this method, accounting for the origins and conditions of possibility of Galilean science not only historically, but also from the primary reality we have access to: the everyday life-world of experience.

5.3.3.3 *Climate science in crisis?*

I detail Husserl's introduction of the crisis of science at length because it serves as a model for understanding the crisis of climate science, i.e. how experiences of climate and its changes relate to the prediction and attribution of extreme weather events to anthropogenic climate change.

Using Platonic or Husserlian language, the problem at the heart of the crisis of climate science is a problem of *methexis*, of the relation between experience and the ideal objects of study. The concept of *methexis* highlights that the same issue is at the heart of Morton's prevarication; we experience climate change in a sense, but not really.

Applying Husserl's analysis, the climate of climate science is an ideality, too. Although it might have originated from a sense that we all share the same (global) climate, as a limit-shape—the product of approximative modelling—climate remains infinitely removed from experience.

Evidence for the ideal and limit-shape nature of modern climate science's concept of climate is put forward by Edwards (2010) in his historical account of climate science. As Edwards explains in the opening sentences of his book, data and models cannot be disentangled in modern climate science (on the 'complex empiricism' of climate science, see also Lloyd, 2012; Parker, 2008).

Today, no collection of signals or observations — even from satellites, which can “see” the whole planet — becomes global in time and space without first passing through a series of data models. Since both observing systems and data models evolve, global data also change. We have not one data image of the global climate, but many. The past, or rather what we can know about the past, changes. And it will keep right on changing. I call this reverberation of data images “shimmering.” Global data images have proliferated, yet they have also converged. They shimmer around a central line, a trend that tells us that Earth has already warmed by about 0.75°C (1.35°F) since 1900. (Edwards, 2010: xiii)

Edwards' use of the metaphor of 'shimmering' reflects the way in which the object of climate science, global climate, is never directly grasped in the same way that local signals, observations or measurements might be. Instead, the results climate science produces *shimmer* around an ideal which climate science tends towards: global climate (on the difficulty of defining climate in climate science, see also Werndl, 2016). Edwards returns to the metaphor of 'shimmering' through-out his detailed account of climate science whenever the reader comes close to encountering climate itself. With regards to climate reanalysis—filling in the gaps in our knowledge of past climates by applying climate models to past, sparse weather data—, Edwards observes that

Each round [of reanalysis] will bring new revisions to the history of climate. Well into the future, we will keep right on reanalyzing the past: more global data images, more versions of the atmosphere, all shimmering within a relatively narrow band yet never settling on a single definitive line. (Edwards, 2010: 336)

Similarly, with respect to “model projections of climate futures, we will always experience them as probabilistic, as shimmering rather than fixed.” (Edwards, 2010: 352) Concerning the production of climate knowledge in general, Edwards summarises that

In a knowledge-production process that involves continuous contestation, you are never going to get a single universal data image, or a single uniformly agreed-upon projection. Instead you will get shimmering data, shimmering futures, and convergence rather than certainty. (Edwards, 2010: 398)

As Edwards concludes, in line with Husserl, the shimmering nature of climate knowledge does not invalidate it. “The climate's past and its future shimmer before us, but neither one is a mirage. This is the best knowledge we are going to get. We had better get busy putting it to work.” (Edwards, 2010: 439) For Husserl, convergence and certainty are not opposites. Instead, the key innovation of Galilean science was to arrive at a concept of certainty as convergence to an ideal, whereby the ideal confers certainty and objectivity to each step which draws closer to it.

However, Husserl's discussion of Galilean science makes transparent that this shimmering approach to climate is but one 'sort of objectivity' which enables some possibilities of comprehension whilst foreclosing others. With regards to the crisis of science, the most conspicuous possibility of comprehension this scientific approach forecloses is the *experience* of climate and its changes. Any attempt to 'close the gap' between experience and (global)

climate is impossible, given that the very meaning of climate science's concept of climate originates from the substruction of a realm of idealities in place of empirical reality. The price (climate) science pays for the attainment of "an identical, nonrelative truth" (Husserl, [1936] 1936: §9, 29) is its separation from the life-world of experience. Hence Rudiak-Gould's (2013) observation that climate science is essentially *invisibilist*.

As Husserl's further discussion of the relationship between Galilean science and the life-world anticipates, the success and consequent dominance of a scientific understanding of climate cloaks and sows mistrust in our everyday experience of climate and its changes. As Morton writes in relation to his theory of climate as a hyperobject,

Waking up in the shadow of the unseen power of hyperobjects is like finding yourself in a David Lynch movie in which it becomes increasingly uncertain whether you are *dreaming* or *awake*. (Morton, 2013: 153)

The rhetoric of climate deadlines and tipping-points, which follows from a scientific approach to climate, drapes our life-world with "a well fitting *garb* [or cloak, MH] *of ideas*" (Husserl, [1936] 1936: §9, 51; on the danger of deadlines, see Asayama et al., 2019). It renders the scientific understanding of climate as the only possible and real one; with far reaching consequences for what one takes the 'problem' of climate change and its possible solutions to be (Hulme, 2009). On an individual level, the rhetoric following the *science* on climate change may instil feelings of climate grief and anxiety, without providing a frame of reference outside 'the science' to help make sense of these emotions. Phenomenology might help ask (and answer) the question why climate change is 'entering the therapy room' (Barry, 2022); how climate change emotions are experienced outside science (see also Bristow, 2019; Cunsolo et al., 2020; Pihkala, 2022).

The crisis that emerges from this process then does not remain restricted to climate science and its difficulty squaring experience with measurement and modelling. Through its sedimentation in the life-world, the scientific concept of climate is taken to be singularly universal and real. The price paid for the adoption of this concept of climate, for mistaking a method for true being, is the detachment from experience: one is no longer able to make sense of experiences of climate change. The very idea that climate and its changes could be experienced is rendered incomprehensible, as Morton's account evidences. In Husserl's words,

If the intuited world of our life is merely subjective, then all the truths of pre- and extrascientific life which have to do with its factual being are deprived of value. They

have meaning only insofar as they, while themselves false, vaguely indicate an in-itself which lies behind this world of possible experience and is transcendent in respect to it. (Husserl, [1936] 1936: §9, 54)

In spelling out the consequences of the Galilean approach, we arrive back at the earlier debates around areal realism within the history of geography, which I discussed in Chapter 3. A phenomenological approach, which I already outlined through the work of Humboldt and Sauer, returns “to the naïvete of life—but in a reflection which rises above this naïvete” (Husserl, [1936] 1936: §9, 59). In agreement with Husserl ([1936] 1936: §9, 59), I argue that this return “is the only possible way to overcome the philosophical naïvete which lies in the [supposedly] ‘scientific’ character of traditional objectivistic philosophy”, rendering experiences of climate and its changes impossible.

5.3.4 Studying...

5.3.4.1 ...science

Jumping ahead to Husserl’s systematic introduction of the concept of the ‘life-world’, the title of Chapter 33 of the *Crisis* outlines Husserl’s phenomenological approach: “The problem of the ‘life-world’ as a partial problem within the general problem of objective science.” (Husserl, [1936] 1936: §33, 121).

For Husserl, the life-world of our everyday experiences is not of interest as the ultimate object of phenomenological study. Instead, Husserl turns to the life-world in order to understand its relationship to science in a two-fold manner: How does ‘objective’ natural science relate the experience of the scientists themselves? And what would a scientific approach to the life-world itself look like? As Husserl ([1936] 1936: §33, 123) emphasises, we cannot simply accept the life-world as it is naïvely given in everyday experience. Instead, what “must be considered before everything else is the correct comprehension of the essence of the life-world and the method of a ‘scientific’ treatment appropriate to it.” (Husserl, [1936] 1936: §33, 123) To simply state that to study the life-world means to study different subjective experiences would be to depart from Husserl’s phenomenological project before it has even started.

Husserl goes on to answer the questions raised in the previous chapter by reflecting on the nature of science. The phenomenological ideal of ‘pre-suppositionless inquiry’ was discussed

in previous chapters. For Sauer, for instance, this ideal meant to observe the geography of a landscape instead of theorising about the processes of its emergence or the way in which a culture is ‘determined’ by geography. Husserl applies this ideal to science itself:

we uphold our assertion and require that one not let the handed-down concept of objective science be substituted, because of the century-old tradition in which we have all been raised, for the concept of science in general. (Husserl, [1936] 1936: §34, 124)

For Husserl, the idea that science equals the sort of quantitative, mathematical exercise discussed above is but an artefact of a certain, now dominant theory of science. This theory-laden or prejudicial understanding of science itself has foreclosed the possibility of *scientifically* inquiring into the lifeworld, which requires a “completely different sort of scientific discipline” (Husserl, [1936] 1936: §34, 124).

In what way did a certain understanding of science foreclose the possibility of studying the life-world scientifically? This question points to the heart of the problem, to the depth of the misunderstanding of geographical phenomenology. Rendering science in terms of ‘natural science’ rests on the distinction between the ‘objective’ truths of science over and against the ‘subjective’ truths of experience. However, as Husserl previously hinted at and Ihde would later go on to unpack with relation to computational science, “while the natural scientist is [...] interested in the objective and is involved in his activity, the subjective-relative is on the other hand still functioning for him” (Husserl, [1936] 1936: §34, 126). The ‘subjective-relative’ life-world is

the source of self-evidence, the source of verification. The visible measuring scales, scale-markings, etc., are used as actually existing things, not as illusions; thus that which actually exists in the life-world, as something valid, is a premise. (Husserl, [1936] 1936: §34, 126)

The scientist hence cannot simply leave the ‘subjective’ life-world behind when they engage in theorising. The scientist relies on the life-world being real; it provides the foundation for their work. Science

is rooted, grounded in the life-world, in the original self-evidences belonging to it. Thanks to this rootedness objective science has a constant reference of meaning to the world in which we always live, even as scientists and also in the total community of scientists—a reference, that is, to the general life-world. But at the same time, as an accomplishment of scientific persons, as individuals and as joined in the community of scientific activity,

objective science itself belongs to the life-world. (Husserl, [1936] 1936: §34, 130)

What phenomenology then studies is not the subjective life-world over and against the objective truths positivist science purports to study. Instead, phenomenology questions the very distinction between subjectivity and objectivity, as it is rendered through the dominant, theory-laden positivist approach to science. A phenomenologist would argue: when a geographical phenomenologist asserts that their response to the dominance of positivism is to study subjective experience, they buy into the very distinction between subjectivity and objectivity which phenomenology seeks to deconstruct.

In Husserl's rendering, scientists engage in a sort of double-speak when they try to insist on the objectivity of their work. In light of the fact that the objectivity of science is an ideal, it is unsurprising that

The objective is precisely never experienceable as itself; and scientists themselves, by the way, consider it in this way whenever they interpret it as something metaphysically transcendent, in contrast to their confusing empiricist talk. [...] Naturally, "rendering ideas intuitive" in the manner of mathematical or natural-scientific "models" is hardly intuition of the objective itself but rather a matter of life-world intuitions which are suited to make easier the conception of the objective ideals in question. Many [such] conceptual intermediaries are often involved, [especially since] the conception itself does not always occur so immediately, cannot always be made so self-evident in its way, as is the case in conceiving of geometrical straight lines on the basis of the life-world self-evidence of straight table-edges and the like. (Husserl, [1936] 1936: §34, 127)

5.3.4.2 Climate zone phenomenology

Let me apply this early stage of Husserl's analysis of the relation between the life-world and science to a problem with climate raised earlier in my discussion of climate maps in Section 3.5. As I argued, the classification of climates into zones which can be mapped onto the earth's surface faces two principal problems: (i) What are the thresholds of the atmospheric properties according to which one climate turns into another and (ii) what is the appropriate resolution of a climate (how big or small can a climate sensibly be)?

As Ellis (2000: 89) points out, these questions are unanswerable because the "ideal climate classification" which would solve these two problems "will never exist due to the facts that the overall climate system of the earth is too complex and the individual climates themselves are not spatially finite." Ellis here admits to the "metaphysically transcendent" (Husserl, [1936]

1936: §34, 127) character of climates within a scientific framework; a climate as a limit-shape is “never experienceable as itself” (Husserl, [1936] 1936: §34, 127).

However, as Sauer’s and Leighly’s (1925) attempt to match the various climate zones with descriptive accounts of what it means to be *in* a given climate evidences, climates are real in a way that is obscured by the imposition of natural science as the only measure of objectivity. However vague, we do experience different climates and are able to give qualitative accounts of how they differ. We experience climates at different scales, ranging from cross-continental to urban climates. Climates can be nested within and intersect each other without losing their specificity. Their specificity, as Husserl might argue, cannot be located in the exactness of a geometrical shape the climate map insinuates. Instead, applying Husserl’s phenomenological approach, the specificity of climate(s) results from the life-world itself. Köppen’s climate zones or the more recent hexagonal map of climatic regions produced for the IPCC’s 6th Assessment Report (see Figure 26) are modelled climates in the Husserlian sense: they are conceptual intermediaries which help us better understand the climates latent in the life-world.

Our prior acquaintance with climates in our life-world is what allows us to look at a climate map and deem some resolutions more sensible than others. Climate science itself “belongs, as the theoretical praxis of human beings, to the merely subjective and relative and at the same time must have its premises, its sources of self-evidence, in the subjective and relative.” (Husserl, [1936] 1936: §34, 133) These sources of self-evidence are both latent in the pre-theoretical life-world, as well as in science’s “theoretical results” which “have the character of validities for the life-world” (Husserl, [1936] 1936: §34, 131).

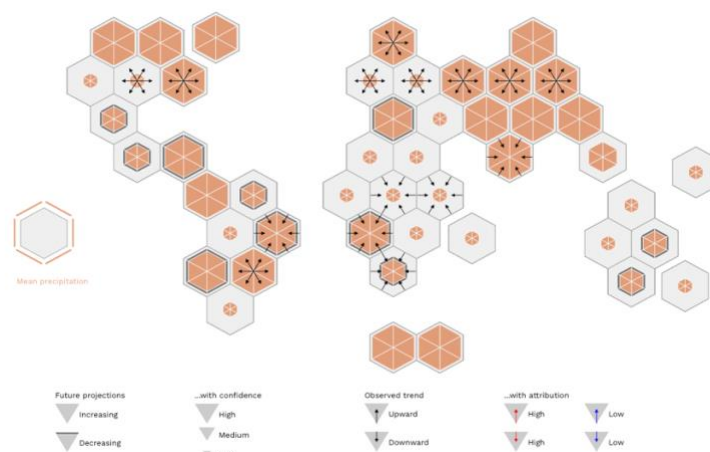


Figure 26: Change in mean precipitation by 2050 due to 2°C global warming (Gutiérrez, J.M. et al., 2021).

5.3.4.3 ...the life-world

Having traced the origin of the validity of natural science back to the life-world, the question arises how the life-world itself can be studied. We now turn to the phenomenological approach proper: To study natural science and its relation to the life-world in a presuppositionless way, the phenomenologist makes use of a method called *epoché* or bracketing. The phenomenologist does not judge natural science to be wrong or ‘merely subjective’, but rather suspends “all participation in the cognitions of the objective sciences”, “any critical position-taking which is interested in their truth or falsity, even any position on their guiding idea of an objective knowledge of the world.” (Husserl, [1936] 1936: §35, 135) This is not to deny science, but to treat science in a disinterested way, much like a public transit hobbyist might study a transit map without the intention of going anywhere (Figal, 2016: 61).

In line with this analogy, Husserl describes the act of bracketing as an ongoing practice, stressing “sharply the vocational character of [...] the ‘phenomenologist’s’ attitude.” (Husserl, [1936] 1936: §35, 137) Although a form of insight or knowledge certainty plays a role in assuming the phenomenological attitude, the bracketing itself is not something which is known, but done. The bracketing is “habitual” (Husserl, [1936] 1936: §35, 137). As Husserl goes on to explain, in sharp contrast to the approach of geographical phenomenology, the “total phenomenological attitude” is not the mere immersion in everyday experience, but “a complete personal transformation, comparable in the beginning to a religious conversion” (Husserl, [1936] 1936: §35, 137), “a *total change* of the natural attitude, such that we no longer live, as heretofore, as human beings within natural existence, constantly effecting the validity of the pregiven world” (Husserl, [1936] 1936: §39, 148).

To better explain what the phenomenologist experiences when they engage in such bracketing, Husserl turns his attention to what I would call an everyday example of the phenomenological epoché: encountering “an alien social sphere” (Husserl, [1936] 1936: §36, 139). Reflecting on experiences of entering a new social circle or learning to live within a different culture, one key characteristic of such experiences is the way in which what once seemed to be self-evident or taking-for-granted—beliefs, values, behaviour, etc.—is suddenly in doubt. This doubt works in two directions: questioning both what is self-evident in the “alien social sphere” as an ‘outsider’, but also questioning what was self-evident in one’s previous “social sphere”. If one is open to such experiences, this moment of doubt is akin to a suspension of judgement, to a bracketing of the validity of the beliefs, values, etc. of a given “social sphere”. Once more, the difference between a phenomenological approach and the mere

turning to subjective experience shines forth: instead of taking subjective experience for granted, the phenomenologist seeks the suspension of judgement both concerning ‘objective’ science and ‘subjective’ experience.

Having reached this point, the question emerges what remains in play when the validity of the life-world is suspended, either through phenomenological reflection or through the sort of experience of alienation described above. What is, to use the philosophical term, the a priori of the life-world? According to Husserl, there is a truth about objects which “is unconditionally valid for all subjects”, something on which all subjects

agree in spite of all relativity—beginning, that is, with what makes objects of the life-world, common to all, identifiable for them and for us (even though conceptions of them may differ), such as spatial shape, motion, sense-quality, and the like—then we are on the way to objective science. (Husserl, [1936] 1936: §36, 139)

Once more, this approach stands in stark contrast to geographical phenomenology’s concentration on individual worlds and their meanings (Relph, 1970). Instead, the phenomenologist tries to parse out what is common to *all* so-called worlds, what affords the possibility of inhabiting any shared reality. This is why Husserl insists on reflecting on what an *objective* science of the life-world would look like. Husserl is not interested in the assumptions taken-for-granted in both naïve positivism and naïve subjectivism. A truly objective approach, within a phenomenological framework, would reflect on how both emerge from the life-world. Calling phenomenology subjectivist is then not simply wrong, but a misapplication of the category. Faced with the criticism of not being ‘objective’, the phenomenologist would respond: Show me an example of objectivity that is not grounded in the prior validity of the life-world out of which all judgements of objectivity emerge. If such an example cannot be given, an objective science must start with the life-world itself to clarify the meaning of its own objectivity.

Phenomenology hence seeks to uncover the “*general structure*” of the life-world beneath “all its relative features” (Husserl, [1936] 1936: §36, 139).

This general structure, to which everything that exists relatively is bound, is not itself relative. We can attend to it in its generality and, with sufficient care, fix it once and for all in a way equally accessible to all. As life-world the world has, even prior to science, the “same” structures that the objective sciences presuppose in their substruction of a world which exists “in itself” and is determined through “truths in themselves” (this substruction being taken for granted due to the tradition of centuries) [...]. (Husserl,

[1936] 1936: §36, 139)

What does this general structure look like? According to Husserl, the first invariant of the life-world is the very meaning of “world” itself: “the world is the universe of things, which are distributed within the world-form of space-time and are ‘positional’ in two senses (according to spatial position and temporal position)” (Husserl, [1936] 1936: §37, 142). This simple definition leads Husserl to highlight “an essential distinction among the possible ways in which the pre given world [...] can become thematic for us.” (Husserl, [1936] 1936: §37, 142) Inhabiting the phenomenological attitude one may, on the one hand, focus on the “consciousness of the world” itself, or, on the other hand, on being “conscious of things or objects” (Husserl, [1936] 1936: §37, 143) of the world. What drawing this distinction reveals is that whilst “every object has its possible varying modes of being valid” (Husserl, [1936] 1936: §37, 143)—being seen, felt, remembered etc.—the world itself “does not exist as *an* entity, as an object, but exists with such uniqueness that the plural makes no sense when applied to it. Every plural, and every singular drawn from it, presuppose the [singular] world-horizon.” (Husserl, [1936] 1936: §37, 143) Once again, this phenomenological reflection on the nature of the world stands in stark contrast to the geographical phenomenologist’s attempt to study the different worlds ‘man’ inhabits.

The distinction between the givenness of the world and the givenness of objects of the world is important as it highlights what the object of phenomenological study is, which has thus far only been vaguely described as the “general structure” of the life-world. Rephrasing his argument from the previous section, Husserl distinguishes two ways in which we can be interested in the life-world. Following a geographical phenomenological approach, one might be interested in the “straightforwardly living toward whatever objects are given, thus toward the world-horizon, in normal, unbroken constancy, in a synthetic coherence running through all acts.” (Husserl, [1936] 1936: §38, 144)

Through a suspension of judgement, we might however instead

direct our attention to the fact that in general the world, or, rather, objects are not merely pre-given to us all in such a way that we simply have them as the substrates of their properties but that we become conscious of them (and of everything ontically meant) through subjective manners of appearance, or manners of givenness, without noticing it in particular; in fact we are for the most part not even aware of it at all. (Husserl, [1936] 1936: §38, 144)

Recalling the critiques of intentionality brought forward in geography, it is important to emphasise that awareness of the distinction between the givenness of objects *in* the world and the givenness of the world itself is not a fact gleaned from a reflection on the non-human outside of consciousness, but from a reflection on the very way in which world is given to us in experience, in manners of givenness or distinct correlational structures between subject and object.

As Husserl goes on to explain, this *epoché* is affected not by focussing on individual objects, passing over from givenness to givenness, gradually reaching an increased awareness of the nature and structure of the life-world. To be successful, the “universal epochē” must instead put the taken-for-granted nature of our everyday life world “out of action, with one blow”, opening up “a thoroughly new way of life.” (Husserl, [1936] 1936: §40, 150)

This new way of life enables the phenomenologist to recognise that subjectivity and objectivity can never be disentangled, that to be means to be within “the universal, absolutely self-enclosed and absolutely self-sufficient correlation between the world itself and world-consciousness” (Husserl, [1936] 1936: §41, 151), to be in “the absolute correlation between beings of every sort and every meaning, on the one hand, and absolute subjectivity, as constituting meaning and ontic validity in this broadest manner, on the other hand.” (Husserl, [1936] 1936: §41, 151-152)

Once more, it is important to recognise the two-sided nature of the correlation Husserl describes. The correlation is not merely subjective, something which somehow takes place in our heads. Instead, what the new phenomenological way of life reveals is that we are always already enmeshed with that which is ‘outside’ of subjectivity. However, we are never able to grasp this outside world as completely severed from subjectivity. The only access we have to it is through a reflection on the correlational nature of our thinking and being. Through this reflection, this *epoché*, this suspension of judgement concerning what is regarded as ‘objectively’ real, the world itself is disclosed to us as a *phenomenon* in its correlational nature (Husserl, [1936] 1936: §41, 152). Only now have we reached the ultimate object of phenomenological study.

5.3.4.4 ...sense-perception

Husserl ([1936] 1936: §45, 157) goes on to fill “in the empty generality of our theme” by applying his phenomenological approach to sense perception. Keeping phenomenology’s interest in the correlational nature of experience in mind, Husserl’s aim is

not to examine the world's being and being-such, but to consider whatever has been valid and continues to be valid for us as being and being-such in respect to *how* it is subjectively valid, how it looks, etc. (Husserl, [1936] 1936: §45, 157)

Focusing on the 'howness' of experience or the manner of givenness means focussing on experience's correlational nature. Detailing how we are conscious of objects of perception, Husserl describes how our multi-sensorial awareness of an object constitutes itself through a unity in difference: what we see and what we touch are, in a sense, different things (the perceptual and the tactile surface). Equally, each different perception of an object—for instance, when we turn a pebble in our hand—reveals a distinct perspective on the object. Nonetheless, in sense perception, these different 'objects' of acts of perceiving are recognised as perspectives on one and the same object.

According to Husserl ([1936] 1936: §45, 158), to be aware of an object then not only means to be aware of its actual momentary presence to our senses, but also to be equally aware of a horizon of possible experiences that surround any present experience. For sense perception of objects to be possible and sensible, we must be aware of the fact that the object of our perception extends and exists beyond any individual perspective we take on it. To use Morton's (2013) language, the 'hyperness' of objects is not the exception, but the rule for the nature of object-experience.

These phenomenological facts are not truths about our subjectivity or about the 'objective' world. Instead, they are facts about the essential ways in which the subjective and objective are correlated. They are results of "intentional analysis" (Husserl, [1936] 1936: §46, 159).

What this fragment of an intentional analysis of sense perception reveals is that underlying any individual experience, there is an "a priori of correlation" (Husserl, [1936] 1936: §46, 159) that makes coherent experience possible in the first place. The distinct ways in which different senses and perspectives come together in our awareness of an object is not some sort of lucky accident; it is the unfolding or explication of the correlational a priori that makes any experience possible. When we study an object closer, the exploration of the horizon of possible experiences related to the object leads to an accrual of meaning.

One conceptual aid to understanding the correlational a priori might be to consider the difference between surprising and impossible experiences. Picking up and turning the aforementioned pebble in our hand, we might have surprising experiences: The pebble might be conspicuously light, perhaps pointing to its true nature as a papier-mâché prop. The pebble might have a surprising temperature, a surprising change in colour or texture as it turns, or it

might even turn out to be something other than a pebble entirely. In every case, surprise entails an accrual of meaning; we reach an ever more adequate understanding of the object in question as the surprises take place within the rules of the correlational a priori. Examples of impossible experiences are, on the other hand, hard to find. They go against what is comprehensible; they are literally unimaginable. An impossible experience would entail a surprise after which the meaning, in a manner of speaking, drops out under the object of our perception.

The intentional analysis Husserl only sketches in the *Crisis* extends beyond the simple sense-perception of a static object. A more complete phenomenological approach to perception would have to, for instance, consider the correlational a prioris underlying movement or the passage of time (Husserl, [1936] 1936: §46, 160). The “universal investigation” Husserl envisions would study all “the different modes of presentification”, “inquiring consistently and exclusively after the how of the world’s manner of givenness, its open or implicit ‘intentionalities.’” (Husserl, [1936] 1936: §46, 160) Although Husserl undertakes more extensive intentional analysis of perception in his earlier works, particularly in *Ideas II* (Husserl, [1952] 1989) and in *Analyses concerning passive and active synthesis* (Husserl, [1966] 2001), what remains conspicuously absent in his approach is an account of the space *between* the objects we experience and ourselves (Figal, 2016: 89-92; Hepach, 2018: 48). Drawing on the work of Figal (2016) introduced earlier, a phenomenology of climate and its changes is instructive for both geography’s interest in the nature of climate and its changes and for phenomenology’s struggle to conceptualise the spatial nature of intentionality and the phenomenological correlation.

5.4 Climatological correlational a priori

Having highlighted the relationship between science and the life-world, and having traced the path Husserl's phenomenological *epoché* takes in the *Crisis*, we have now arrived at the object of phenomenological inquiry. The object of phenomenology is not naïve subjective experience, but the *phenomenality* of experience (Figal, 2016: 4), i.e. the distinct manner of givenness that characterises every experience. Reflecting on the phenomenality of experience—the 'howness' of experience—means reflecting on how subject and object are correlated in experience; how they co-constitute and exceed each other.

With the basic tenants of Husserl's theory being introduced, I apply the Husserlian *epoché* as an analytical framework for understanding climate and its changes. To this end, I uncouple my reconstruction from the further development of Husserl's thought in the *Crisis*. Instead, I link my account back to the discussion of the spatiality of experience in Section 5.2, arguing that if the phenomenologist is tasked with uncovering and reflecting on the different "open or implicit 'intentionalities'" (Husserl, [1936] 1936: §46, 160) of experience, on the different manners of givenness which give experience its shape, then this task also applies to the phenomenality of climate and its changes. By giving a phenomenological account of climate and its changes, I contribute to Husserl's "task of an 'ontology of the lifeworld'" which he himself only "roughly outlined" (Ströker, 1976: XXI, translation MH).

Cultural geographers themselves have contributed to this task, albeit without the use of phenomenological theory. Shove (2003) and Hitchings (2010; 2011b; 2011a; 2022), for instance, have studied how climates shape our everyday routines, paying particular attention to how climates are (air-)conditioned to meet different needs. As I argued with relation to built spaces in Section 5.2.2, starting with artificial climates is sensible in that they bring to light climate-experiences of greater specificity; they are experienced in contrast to the climate outdoors, to adjust them requires a degree of reflection concerning how climates shape experience (see also Section 4.5.3). Shove's and Hitchings' work then provides starting-points for where empirical observations might transition into phenomenological reflection. Further phenomenological research into the written geographies of weather might assess what the actual object of said geographies is, i.e. if they are about weather, season or climate (for an overview of recent work on weather, see Barry et al., 2020).

We then arrive back at the problem which I have addressed through-out this thesis: climate is neither a simple object of experience, nor is it simply an idea of the human mind. To provide a theoretical account fit for future geographic research into the experiential reality of climate

and its changes requires clarifying what a phenomenology of climate and its changes would even consist in. To this end, I have insisted on the laborious reconstruction of the object of phenomenological study—phenomenality—in order to bring climate’s reality into view.

Reflecting on the previous distinction between the givenness of the world itself and the givenness of objects within the world, I argue that climate’s givenness is closer to the former than the latter. Climate is not an object to be encountered, but a world-like structure that coheres subject and object in distinct ways, facilitating distinct styles or shapes of experience and existence. Climates themselves are distinct correlational a prioris in which we experience and exist. Hence the phenomenon of climate does not come into view when we ask “*Where* is climate?”, as though we were searching for a delimitable object. Instead, climate comes into view through the reflection on phenomenality, i.e. when we ask *how* we ourselves and the objects of our experience are given. Climate is always already ‘here’.

Our preference for some climates over others, the ways of life and life-forms a given climate affords are manifestations of these different manners of givenness. Instead of being the focal point of experience, like simple objects of perception are, climate itself is more akin to the background or horizon of possibility that affords distinct modes of experience (for examples of the different shapes of climate, see the opening pages of Maslin, 2013).

Climates are thus not so much given as ‘half-things’ we can ‘carve out’ (Plato, *Phaedrus*, 265e). Climates are instead an “open horizon” (Husserl, [1936] 1936: §47, 162) of distinct possibilities of experience; past, present, and future. Husserl ([1936] 1936: §47, 162) distinguishes between an object’s internal horizon—the possible perspectives that together constitute an object—and its external horizon—its possible relation to other objects within “a field of things”.

With regards to climate, the distinction between internal and external horizon makes no sense: climates are without perspective. Instead of being something amongst a “field of things”, climate is more akin to the field itself, allowing things and ourselves to correlate in distinct ways. In a manner of speaking, climates themselves are a ‘perspective’ on subjectivity and objectivity.

In an earlier chapter, Husserl highlights how—in perception—things and changes in their surroundings appear to hang together. The changes we perceive in a field of things “are not accidental and arbitrary but depend on one another in sensibly typical ways.” (Husserl, [1936] 1936: §9, 30) The “types of relatedness” through which we comprehend these changes are

themselves moments of everyday experiencing intuition. They are experienced as that

which gives the character of *belonging together* to bodies which *exist together* simultaneously and successively [...] (Husserl, [1936] 1936: §9, 30).

In a manner of speaking, Husserl ([1936] 1936: §9, 30) writes, things seem to have their “habits”: “they behave similarly under typically similar circumstances.” (On habit in Husserl, see also Arnold, 2022) Extending this metaphor outwards, Husserl ([1936] 1936: §9, 31) argues that the “intuitable world as a whole”, that in which things exist, has its own habit. In other words, the “surrounding world has an *empirical over-all style*.” (Husserl, [1936] 1936: §9, 31) No matter how “we may change the world in imagination or represent to ourselves the future course of the world, [...] we necessarily represent it according to the style in which we have, and up to now have had, the world.” (Husserl, [1936] 1936: §9, 31)

Through phenomenological reflection, we can become “explicitly conscious of this style” (Husserl, [1936] 1936: §9, 31), of the possibilities it affords. In doing so “we see that, universally, things and their occurrences do not arbitrarily appear and run their course but are bound a priori by this style, by the invariant form of the intuitable world.” (Husserl, [1936] 1936: §9, 31) Analogously to the argument I made with respect to areal realism, this world is “not merely a totality”, i.e. the sum of things in the world, but is “an all-encompassing unity” (Husserl, [1936] 1936: §9, 31).

Between this singular world with its universal style and the individual things—the habits of which act in counterpoint to the habit of the overall world—lie climates. Whereas Husserl previously defined the correlational a priori in the most general sense, writing that “the world is the universe of things, which are distributed within the world-form of space-time” (Husserl, [1936] 1936: §37, 142), climates are distinct shapes of this ‘world-form’. Climates, with their differing styles, guarantee a distinct flow of manners of givenness, not only in relation to an individual entity or object, but for a whole temporal-spatial field; for a climate.

Following on from my discussion of the spatiality of experience in Section 5.2, we never find ourselves opposite a climate, but always already in one. Analogously to Figal’s example of ‘built spatiality’—rooms—, climates are “limited and therein definite possibilities” (Figal, 2016: 220, translation MH) of the phenomenological correlation.

The thought that goes into the construction of the (indoor) climates of built spaces, and how those climates relate to the climate outside, can function as model for a phenomenological reduction of climate: to ‘build’ climates *well* requires an increased awareness of how climates afford distinct possibilities of experience (possible starting-points for a phenomenology of indoor climates include Rahm, 2018; Barber, 2020; Horn, 2016).

In contrast to rooms, the climate ‘outside’ cannot be left. One might be able to change climates by changing one’s location or experience a change in climate in the location one is in, but the climatic nature of experience cannot be ‘left’. Applying Köppen’s metaphor of the loom to the nature of correlational a priori, climate is part of the “fixed frame of the loom” (Köppen, 1936: 6, translation MH), in which the subject and object of experience are the warp and weft respectively. The “fabulous fabric” (Köppen, 1936: 6, translation MH) of experiences renders its affordances—such as climate—invisible.

Although climates and their respective influence on manners of givenness differ, climate is a universal correlational a priori. Climate belongs to “the invariant structures of the life-world” (Husserl, [1936] 1936: §51, 173) and hence forms the basis of climate science’s idealisation of them in the form of climate zones or models. No “conceivable human being, no matter how different we imagine him to be” (Husserl, [1936] 1936: §48, 165), can conceive of a world without climate.

5.5 What changes with climate change?

The language of ‘invariant structures’ may seem at odds with the very phenomenon that motivated my inquiry into the experiential reality of climate: climate *change*. As I highlighted in Chapter 2, climate change is related to a feeling of dislocation and weirdness, to things seeming out of place.

To clarify the relation between invariance and change with relation to climate change, I conclude my phenomenological account in this chapter by highlighting a further aspect of what I take to be the essential relation between phenomenology and climate change: Phenomenology does not only provide a methodological framework to bring to light the experiential reality of climate. *Experiences of climate change themselves induce phenomenological reflection* (on the origin of phenomenological reflection in everyday experience, see also Merleau-Ponty, [1960] 1964: 164).

Where Malm (2018: 15) focussed on the fact that in experiencing climate change, “we inhabit the diachronic, the discordant, the inchoate”, through a phenomenological lens, experiences of climate change can be recognised as an instance of the ‘universal epoché’: the taken-for-granted nature of our everyday life-world is put “out of action, with one blow”, opening up “a thoroughly new way of life.” (Husserl, [1936] 1936: §40, 150) Where Husserl located this new way of life with relation to ‘the life of the mind’, climate change evidences the wider truth of this phenomenological insight: the way our reality coheres is altered both

ideationally and materially as climates change.

Much in the same way that the phenomenological reduction makes us aware of the correlation of subjectivity and objectivity in experience, experiences of climate change make us aware of the inseparable way in which we are entangled with the material, atmospheric reality surrounding us on an ontological level.

What a phenomenological approach to these experiences helps us see is that what changes with climate change is not only the physical composition of our atmosphere. Nor does anthropogenic climate change render the ‘idea’ of climate obsolete. Changes in climate mean changes to a correlational a priori which renders our experience and existence coherent. One’s awareness of climate then intensifies as its correlational nature turns conspicuous through climate change. A correlational a priori turning conspicuous in experience means that we become aware of the correlational force, of the “circumstances” (McCormack, 2017: 8) holding our world together, rendering our experiences coherent. Consequently, one experience of climate *change* discussed in Chapter 2 is incoherency.

Returning to the question of invariance and change more generally, climate change elucidates the nature of correlational a prioris. As a correlational a priori, climate does not determine experience or existence in the same way that climate determinists might have claimed, nor do correlational a priori necessarily prefigure experience in the way post-phenomenologists have argued (Wylie, 2005: 240). Correlational a priori are better thought of as a field of possibilities—a “cloud of conditions” (McCormack, 2017: 7)—according to which climates and life within them can take shape. Although the shapes these possibilities take in varying climates differ, the possibilities themselves are invariant. Individual climates are, borrowing from Goethe’s phenomenology of the concept discussed in Section 3.4.1, systolic moments of the climate-form. This form determines how subject and object *can* be climatologically correlated, much in the same way that the correlational a priori of perception determines how subject and object *can* be correlated without, in the strict sense, dictating what is concretely seen how at any given moment.

Following my previous thought experiment, evidence for the existence of climatological correlational a priori can be found when one attempts to consider impossible climates. In a recent study, Bastin et al. (2019) identified a number of climate city analogues: Following an optimistic emissions scenario, they argue that cities around the world will climatologically move closer to the equator; by 2050 Cambridge’s climate would then resemble the climate of Barcelona today. As cities globally would climatologically shift south by about 1000 kilometres in 50 years, Bastin et al. (2019) determine the average theoretical velocity of climate

change to be about 20km per year. Borrowing a powerful analogy from environmental activist and journalist Lynas (2020), it is as though Cambridge and its inhabitants “were on a slow-moving giant conveyor belt, transporting [us] deeper and deeper towards the sub-tropics at the same speed as the second hand on a small wristwatch.”

Aside from being a good example of a phenomenologically informed approach to climate modelling—taking the life-world of individual cities as its premise—, the study highlights what remains the same even as climates change, namely *the way in which* (different) climates cohere our ways of life. This is the very premise for the identification of climate city analogues.

Bastin et al. (2019: 9) were not able to identify climate city analogues for all the cities they studied; “22% of the world’s cities are likely to exist in a climatic regime that does not currently exist on the planet today.” (Bastin et al., 2019: 9) According to its most recent critics, this would present a challenge for a phenomenological approach (Meillassoux, [2006] 2008; Morton, 2013). How can phenomenology study something that has never been experienced?

To reflect on experience phenomenologically, to undertake the phenomenological epoché as outlined above means to abstract from experience, considering its conditions of possibility; the diastolic back of the experiential carpet (Figal, 2016: i). Through this mode of reflection, phenomenology uncovers the fact of phenomenality: We do not have immediate access to our objects of experience. Instead, any experience has its manner of givenness. To understand the nature of manners of givenness means to extrapolate which other experiences are *possible* within a given manner of givenness. An intuitive understanding of these possibilities guides our very ability to, for instance, perceptually perceive the world. Even if we were to encounter a completely novel object or find ourselves immersed in a surrounding we had never experienced, an intuitive understanding of the possibilities of perception guides our experience in such a way that meaning is accrued: we know to draw closer to an object to see its details, to step further away to become aware of its relation to its surroundings and its scale, to change perspectives to complete our picture etc. Turrell’s artworks, for instance, work precisely on the basis of exploring these possibilities to their limits, informed by his experience as a fighter jet pilot (Adcock and Turrell, 1990).

On a more general level, Husserl argued that a manner of givenness governs our experience of the world as a whole; no matter how “we may change the world in imagination or represent to ourselves the future course of the world, [...] we necessarily represent it according to the style in which we have, and up to now have had, the world.” (Husserl, [1936] 1936: §9, 31)

Analogously, reflection on the correlational nature of climate *or experiencing climate change* means to become increasingly aware of the possible manners of givenness climate

affords. Climate remains invisible if we look for an object of experience. However, through phenomenological reflection, we can explore climate as a correlational a priori, enriching our understanding of the ways in which climate correlates experience. Although it is certainly possible to experience (and imagine) different climates, I argue that it is impossible to experience or imagine a world with no climate at all. No matter which future one imagines, it would still be climatological. It would follow the style, the field of possibilities, the grammar of experience that climate is.

Hence, even though 22% of the cities studied by Bastin et al. (2019) will have a climate that no place on earth currently has, one is still able to phenomenologically reflect on what such changes in climate *would* mean to the manner of givenness of one's world. Such reflection is of broader import as it raises to awareness what changes with climate change. On an individual level, experiences of extreme weather events turn from experiences of *weather* to experiences of *climate (change)* when they are no longer taken to be individual events. Instead, these weather events are understood to be indicative of a change in the overall coherence of our world, in the types of future experience and existence that are rendered (im-)possible.

This is not to say that one can predict what future climates hold in store for us through pure imagination or intuition. The ultimate touch stone for the validity of phenomenological truths is their alignment with experience. Differences in experience—across time, space, and positionalities—must inform continual phenomenological theorising. On the deepest level, climate change asks phenomenologists to reconsider the nature of the possibilities governing experience, and how they are subject to change over time through an anthropogenic change in our atmosphere. The radical question climate change and the possibility of climates beyond current comprehension poses is if climates can change to a degree where the correlation between subject and object they afford begins to fray: making experience and existence impossible.

6 Conclusion: climate realism

Returning back to the titular question of my thesis, I have endeavoured to show that climate is real. What at first seemed like a trivial question acquired philosophical depth as I began to consider what *sort* of realism would enable us to account for climate and its changes in experience. In light of the confusion around experiences of extreme weather and climate change amongst the public and climate scientists, this question turned out to be anything but trivial.

The realism required to accept and recognise the shared experiential reality of climate and its changes is, I have argued, a *phenomenological realism*: for experiences of climate and its changes to come into view one must reflect on the ways in which experience is correlated.

Through the lens of geographical readings of phenomenological theory, phenomenological realism or a “*realistic phenomenology*” (Figal, 2016: 1, translation MH) might seem like an oxymoron: The call by phenomenologists to “not pretend that you are not there yourself” (Figal, 2016: 1, translation MH) might be turned around by post-phenomenologists to argue that phenomenologists cannot get *beyond* themselves, stuck in the “correlationist circle” (Meillassoux, [2006] 2008: 5).

I have argued, following Figal’s (2016) approach, that to insist on the correlational nature of experience does not mean that something *is* real in virtue of our relation to it. Instead, I have argued—through a reading of the history of geography, Ancient Greek philosophy, and phenomenology—that something (climate) *reveals* itself to be real correlationally: “It is true that without the possibility of referring to the real, one does not know what the real is. But the reality of the real emerges neither from reference, nor from knowledge.” (Figal, 2016: 1, translation MH)

To experience means to take part in a reality which exceeds experience. As Figal (2016: 2) explains, the possibilities according to which we experience something are themselves possibilities of the reality of that which we are experiencing; they are not merely possibilities of our own subjectivity. Our consciousness and experience are hence not closed off from reality, unable to get ‘outside’. Instead, the very correlated nature of experience points to the fact that we are always already entangled with a (climatological) reality that exceeds us. To clarify this entanglement requires a phenomenological approach (Hepach, 2021).

The (metaphysical) assumption I have made through-out this thesis, following a philosophical genealogy one might trace from Plato’s writings all the way to Figal’s phenomenological work, is that reality has a structure or grammar that we can explore and

describe through experience and reflection. This reality is universal. My whole account hence cuts against the grain of research that seeks to emphasise ontological pluralism in a strong sense, in particular with respect to (experiences of) climate change (most recently in Sultana, 2022).

Showing my metaphysical hand, I believe—in the phenomenological sense of the *Urdoxa*—that there is a single reality which can be elucidated through different modes of inquiry. The assumption of a singular reality has been subject to much critique due to its inherent danger: universalising ways of knowing and experiencing, objects of knowledge and experience. Highlighting this danger, decolonial critiques of phenomenology have pointed out that Husserlian phenomenology in particular reinserts a (European) ‘transcendental subjectivity’ which underwrites the universality of reality (Mignolo, 2021: 458-482; see also Guernsey, 2020). Any account based on said subjectivity renders a particular experience universal, erasing the possibility of other experiences.

In my recasting of phenomenology through Zahavi’s and Figal’s work, my aim was to elaborate a phenomenological approach which locates reality in a shared space of possibility. The shape of this space has necessarily been informed by my own background and experience, but I hope the emphasis on possibility over actuality, on revising the (assumed) structure or grammar of reality in light of experiences that question it provides against the danger of erasure.

This hope is underwritten by other developments in phenomenological theory which I was unable to discuss given the scope of this thesis. Japanese philosopher Watsuji Tetsurō ([1935] 1961) developed a phenomenological account of climate and the spatiality of human existence after encountering Heidegger’s work, which he critiqued for privileging the temporality over the spatiality of human existence. The object of Watsuji’s analysis is the Japanese concept *fūdo* [風土], which denotes the (atmospheric) entanglement of natural and cultural features of a given place. Watsuji’s account of *fūdo* too necessitates the belief in the “nascent intelligibility” (Johnson, 2019: 5) of reality which phenomenology explores (see also Hepach, 2020). Following Berque’s (2004) observation, a further ‘road not taken’ to be explored in future geographic research is the close relation between *fūdo* and Vidal’s ([1922] 1926) concept of *milieu*. In the untranslated (into English) 1948 afterword to his phenomenological study of climate, Watsuji ([1935] 2017: 261) recognises the kinship between his thinking and the writings of French ‘Anthropogeography’, which developed as a critique of Ratzel’s foundational work (see also Lossau, 2009). Given Watsuji’s development of a phenomenology of climate as a counterpoint to Heidegger’s phenomenology of temporality, a return to

Watsuji's work would be particularly promising in light of climate *change* unsettling the difference between phenomenologies of time and space (see also Janz, 2011; Schultz, 2020).

The second development I want to briefly highlight is Waldenfels' ([2006] 2011) phenomenology of the alien, which sets out to base phenomenological theory on that which categorically escapes human comprehension and experience, that which has no meaning but provokes or prompts meaning (Waldenfels, 1997: 52). Waldenfels ([2006] 2011: 30) identifies a temporal *diastasis*, an unbridgeable gap between 'something' which affects us and our experience/response to that 'something'. With respect to human life, two simple examples include the fact of one's birth and one's name. According to Waldenfels, we always come 'too late' to fully comprehending our existence because we never chose to be born. Our name then resembles an everyday signifier of this unbridgeable gap. Although one generally does not pay attention to this fact, our given name is exactly that: we are called by a name we never chose. Waldenfels introduces these examples in order to highlight how 'the alien' leaves its trace at the very heart of experience and intentionality; it "leaves a wound that never fully heals" (Waldenfels, 1997: 42, translation MH). Although this is not a major theme of his work, Waldenfels (1997: 52) identifies extreme weather events as an example of experiences of the alien which are inescapable. Future research might explore Waldenfels' (2012) later concept of *hyperphenomena* as a phenomenological alternative to hyperobjects, highlighting how 'the alien' permeates both the temporality and spatiality of experience in light of climate change. Waldenfels' phenomenology at the limits of language and comprehension might further guide research into (climate) concepts across languages and cultures (see Waldenfels, [2006] 2011: Chapter 6).

Returning back to the authors I discuss in this thesis, Figal explains, with regard to phenomenology in general, that no single person can ever gain complete awareness of the "complex interplay of possibilities" (Figal, 2016: 3, translation MH) which make up phenomenological realism. Instead, each experience and act of reflection have as their objects "only particular expressions and details of an infinitely rich possibility and reality." (Figal, 2016: 3, translation MH)

To recognise and articulate this possibility, and how it is (phenomenologically) refracted through, for instance, categories such as race (Fanon, 2008), gender and sexuality (Ahmed, 2006), and disability (Diedrich, 2001), a realist approach must be brought into conversation with critical phenomenology; a recent alternate, politically self-aware approach to post-phenomenology in geography (Simonsen, 2007; Kinkaid, 2020; Simonsen and Koefoed, 2020; Kinkaid, 2021) and beyond (Salamon, 2018; Mattingly, 2019; Weiss et al., 2019). Recognising

the phenomenological enterprise as the study of possibility responds to geography's concern that "a more critically reflective phenomenology would of necessity have to take account of the limitations of European philosophical traditions and the need to recognize multiple constellations of subjectivity." (Gandy, 2017: 358)

On the one hand, and primarily, my phenomenological account of climate sought to provide an immanent critique of how Sauer, climate, and phenomenology have come to be understood in geography. Using this critique as a foil, I developed my own account of conceptualising climate *otherwise*; namely phenomenologically. On the other hand, by grounding the phenomenological correlation in spatiality in general and climate in particular, as opposed to in 'transcendental subjectivity', I sought to establish a phenomenological approach which is realist.

I take *realism* to be necessary in order to recognise the shared reality of anthropogenic climate change. I take *phenomenology* to be necessary in order to give voice and do justice to the heterogeneous nature of (experiences of) climate change. A *phenomenological realism*, I conclude, provides the theoretical foundation for future geographic research into the multiplicity of experiences of climate change, showing that climate and its changes are real.

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