

The Pathogenesis of the Modern Climate

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Abstract

This article offers an exploratory semantic analysis of the concept of climate through the lens of Reinhart Koselleck's theory of historical semantics. After discussing reasons for its absence in Koselleck's own scholarly investigations into the semantics of modernity, the article argues that the word climate acquired the properties of a freestanding concept in the course of the eighteenth century. The steep rise in the word's relative frequency at that time is explained in terms of its relevance to contemporary perceptions of time, and more particularly the rise of the progress narrative as a driver of human-made history. The article equally traces the concept's decline in the course of the nineteenth century by pointing to developments in the sciences and the secularization of eschatology. Finally, the article reflects on the concept's revival since the latter half of the twentieth century. Focusing specifically on the recent emergence of collocations such as "climate crisis," the article argues that, in its orientation towards an open future, climate change communication reveals its reliance on the temporal framework of accelerating progress that it at the same time holds responsible for our warming planet. The article concludes with a plea to pay closer attention to the temporal presuppositions underlying climate change communication.

Keywords: Climate, historical semantics, Koselleck, secular eschatology, crisis.

Resumen

Este artículo ofrece un análisis semántico del concepto de clima enfocándolo desde la teoría de la semántica histórica presentada por Reinhart Koselleck. Partiendo de las razones de la ausencia del concepto en las investigaciones acerca de las semánticas de la modernidad del mismo Koselleck, el artículo argumenta que el término clima surge como concepto propio a lo largo del siglo XVIII. El rápido incremento de la frecuencia en la que se usa el término en esa época se explica en base a su relevancia para las nociones contemporáneas del tiempo y sobre todo con respecto al ascenso del relato de progreso como motor de la historia hecha por el hombre. El artículo sigue también el descenso que vive este concepto durante el siglo XIX al indicar los avances en ciencia y la secularización de la escatología. Finalmente, el artículo medita sobre el resurgimiento del concepto desde la segunda mitad del siglo XX. Centrándose especialmente en la emergencia de combinaciones como "crisis climática" el artículo establece que la comunicación del cambio climático, orientada hacia un futuro abierto, confía en el modelo temporal de progreso en aceleración que al mismo tiempo hace responsable del calentamiento del planeta. El artículo concluye comentando la necesidad de prestar más atención a las presuposiciones temporales que subyacen en la comunicación del cambio climático.

Palabras clave: Clima, semántica histórica, Koselleck, escatología secular, crisis.

In May 2019, the *New York Times* reported that the Trump administration had ordered the United States Geological Survey, a science agency of the Department of the

Interior concerned primarily with geological research into natural hazards, to stop modeling climate impacts beyond 2040 (Davenport and Landler). Since most climate models predict a spike in global temperatures after this date due to tipping elements in the atmosphere, this decision on the part of the Trump administration was widely perceived as a politically motivated attempt to confound the conclusions of climate science, confirming a policy line initiated by earlier cuts in the USGS budget, along with the US withdrawal from the 2015 Paris Agreement.¹ But the controversy is no less remarkable for showing the extent to which modern society has futurized politics. Climate models, such as those used by the Intergovernmental Panel on Climate Change, commonly predict atmospheric patterns up to 2100. They bring the future into the present in ways not feasible before the development of complex simulation systems. Even climate change deniers are apparently compelled to accept the capacity of these mathematical models, if not their conclusions. While a number of scholars has critiqued the increasing dominance and reductionism of predictive models in climate science (e.g. Hulme), comparatively little scholarship has been devoted to this topic from the vantage point of the philosophy of history.

In this essay, I argue that “climate,” understood as a singular atmospheric system spanning the globe that is realized projectively, is an inherently political concept that reflects the historico-philosophical concerns of modern society. I take my cue from the late German historian Reinhart Koselleck’s observation that our relation to the future, in its modern articulation as an expression of linear, open-ended time, is profoundly paradoxical. Koselleck argued that, unlike the past, which the historian can research if not fully reconstruct, the future fundamentally escapes our experience. At the same time, society has to foresee this empirical “*Unerfahrbarkeit*” of the future, its inherent non-experienceability (*Zeitschichten* 205). As a result, temporal perspective and positional commitment are written into our modern knowledge infrastructure. Since modern society responds to increasing complexity by orienting itself towards an open future, which allows for the co-existence of mutually incompatible scenarios, it at once makes that future more controllable and multiplies opportunities for the politicization of scientific findings. The USGS controversy brings out this paradoxical relation to the future. Simulations of atmospheric patterns extending over hundreds of years involve factors and variables that can impossibly be foreseen by science. We do not know how society will develop, how it will adjust to climate change, what kinds of technologies will be introduced to curb or reverse concentrations of greenhouse gases, whether we will survive at all. To incorporate all these variables, our predictions would have to model not just future scenarios, but also anticipate people’s responses to such scenarios, which, among other things, might include the decision to call a moratorium on modeling. Yet, the dominance of such highly uncertain simulations reveals a growing reliance on the future, which would not be plannable in this way if our calculations were

¹ One researcher warned that the results of climate modeling “should not be taken out of context for political reasons” (Tayag). Upon his appointment as the director of the USGS in March 2018, James Reilly, a former astronaut with links to the oil and gas industry, had still vowed to safeguard the agency from political interference (Doyle).

not subject to continual revision and contestation. Paradoxically, what makes long-term simulations more reliable or scientific than short-term ones is precisely that they involve more risky calculations, thus opening up a broader space for political action.

Koselleck argued that modern society prepares itself for this process of futurization by means of the singularization and temporalization of concepts. In the course of the eighteenth century, words such as “revolution,” “epoch,” or “progress,” which initially denoted gradual or cyclical spatial movement (all three are drawn from astronomy), were loaded with temporal significance and thus came to function as signifiers of political and social history.² Around the same time, “history” itself, as a singular concept rather than exemplary histories in the plural, was divorced from natural chronologies and came to represent the modern experience of time as a continuous, irreversible process. As I hope to show in what follows, this process of temporalization is equally visible in the semantic career of “climate,” which has profound implications for how we address the problem of climate change today. We now understand the climate as a planetary atmospheric system in the name of which we act, allocate blame, organize political movements, and so forth. However, the original signification of the word was local rather than global. In singularizing the climate, we have made it serviceable for addressing issues of global concern. But, arguably, this has come at the price of its progressive derealization: we now think of the climate not as a localizable entity but as belonging entirely to a future that constrains our possibilities of action in the present. Insofar as it opens itself to the unknown, this future is understood as plannable but also as subject to manipulation and ideological contestation. It is this problematic that I explore below.

I start with a brief introduction of Koselleck’s conceptual history and its usefulness (as well as limitations) for studying the climate and how we express it (I.). In a second step, I sketch out the semantic career of “climate” and its transformation from a local, spatial term into a global concept (II.). In contradistinction to other approaches in the field, I locate this shift during the eighteenth century when, according to Koselleck, experiential space was reconfigured in the direction of an open future. My aim here is not to offer a sustained conceptual analysis of “climate” but rather to provide a theoretical framework for the following discussion, which teases out the temporal presuppositions of recent climate debates (III.).³ I will argue that these debates, while pointing to the unsustainability of the current economic system, issue from the immanent conception of time that is ingrained in the modern growth narrative. In other words, the article addresses a tension in much of today’s climate change communication, which in its orientation towards an open future reveals its reliance on a quintessentially modern temporal framework of accelerating progress that it at the same time holds responsible for our warming planet. To illustrate this dynamic, I focus on the recent emergence of collocations such as “climate crisis,” which bring out a modern temporal

² In this article, I use double quotation marks to highlight that a term constitutes a concept in Koselleck’s sense.

³ In a follow-up article, co-authored with Karl Berglund, I use the quantitative methods of distributional semantic analysis to empirically test out the hypotheses articulated here.

sensitivity by suggesting that we have reached an epochal moment in history that calls for prompt concerted action. While this way of conceptualizing the intractable problem of climate change may be useful for mobilizing political support for climate change policies, it at the same time serves to hide the original function of “climate” as a tool of differentiation, a function that the word continues to perform even in its abstract, derealized form. Even as they invoke a global addressee, climate change policies might thus indirectly reinstall hierarchies that the word climate as a local signifier was designed to uphold.

The Historical Semantics of Climate

Reinhart Koselleck, who died in 2006, never offered a sustained analysis of “climate.” It is conspicuously absent from the *Geschichtliche Grundbegriffe*, the multivolume historical lexicon (1972-1997) to which Koselleck’s name is indelibly linked. While the conceptual career of “nature” is reviewed in an extended entry, “climate” figures only tangentially under other concepts, such as “*Bedürfnis*” (needs). This might in part be explained by the fact that the lexicon focuses on the so-called threshold period (1770-1850), a time of accelerated semantic change that signaled the toppling of society towards a modern temporal consciousness. Another reason might be that the list of basic concepts was decided in the late 1960s and early 1970s, when the specter of nuclear disaster dominated the political agenda and climate change was just starting to appear on the horizon. The expression “climate change” only gained currency towards the 1970s, not coincidentally when computer modeling became standard scientific practice. In the introduction to the seventh volume of his lexicon, Koselleck did note that the history of ecological concepts remained to be written, although, significantly, he did not list “climate” among the concepts calling for further exploration (“Introduction and Prefaces” 33). A conceptual lexicon covering the most recent periods, if it were ever to materialize, could most likely not avoid including “climate” among its basic concepts.⁴

But we should also be prepared to consider the possibility of a perspectival bias built into Koselleck’s own intellectual project. A search for “climate” in the English Google corpus reveals a sharp spike in its relative frequency during the latter half of the eighteenth century, precisely the threshold period when, in Koselleck’s view, expectations and experience increasingly drifted apart and a new historical awareness emerged.⁵

⁴ Christian Geulen and Christian Bermes are currently working on a German lexicon of political concepts in the twentieth century (*Politische Schlüsselbegriffe des 20. Jahrhunderts*) that is modeled on Koselleck’s history of basic concepts. In a programmatic article introducing this project, Geulen highlights the importance of “environment” (but not “climate”) as a basic concept of the twentieth century (Geulen 2010). A similar initiative is *Das 20. Jahrhundert in Grundbegriffen. Lexikon zur politisch-sozialen und -kulturellen Semantik in Deutschland*, a project conducted at the Leibniz-Zentrum für Literatur- und Kulturforschung. For various assessments of the desirability and value of a conceptual history of the twentieth century, see a 2012 roundtable in the journal *Contributions to the History of Concepts*.

⁵ The curves for German “Klima” and French “climat” follow a roughly similar pattern. If we search for the plural “climates” in the English corpus, the downward curve after 1800 is even more impressive and there



Ngram for climate in the English Google Books corpus (1700-2019)

After the 1770s, the word's frequency decreases steadily until it picks up again towards the 1950s, when the first scientific findings of anthropogenic climate change were presented. However, it never regained the relative frequencies that it attained in the late eighteenth century, which is significant in light of recent pronouncements that we are living through an epochal time of unprecedented climatic awareness.⁶ A conceptual history of modernity should be able to account both for the importance of "climate" during the threshold period and its rapid nosedive in the period that followed. That the *Geschichtliche Grundbegriffe* did not pick up on this might be attributed in part to the architecture of Koselleck's theory. Modernity, in his view, emerged in the separation of society from nature. The historian's task as he understood it was to isolate the semantics of historical time as distinct from naturally determined chronologies. In this framework, the climate properly speaking does not possess a history of its own. It is of course highly questionable, given what we know about the warming atmosphere, whether we can still afford to segregate society from nature in such a way. If they are distinct, climatic and historical time intersect in ways that cannot be accounted for in a relatively linear narrative of modernization. Moreover, as the Google data reveal in however provisional fashion, the concept "climate" might itself be understood as a motor for the emergence of historical time in modernity. By presenting the natural world as a uniform stage for the emergence of modern historical temporalities, theories of modernization such as Koselleck's to some extent presuppose the denaturalization of socio-political space that they simultaneously diagnose.

In spite of these reservations, I would argue that Koselleck's theory can still provide us with a useful heuristic framework for bringing into focus the societal impact

is no upswing in the latter half of the twentieth century. Something similar goes for the cognate expression "airs." This indicates a clear tendency towards the singularization of such concepts. The concept "atmosphere" was likewise still often used in the plural during the eighteenth century. Robert Boyle, for instance argued that all bodies have their own "atmospheres" (Boyle).

⁶ The view that we have arrived at a moment of ecological enlightenment is evident, for instance, in Steffen et al. Humanities scholars have likewise welcomed the idea of an epochal transition leading up towards a new climate regime (Latour).

of phenomena such as climate change. Koselleck understood his research into the temporal structures of concepts as part of a larger study of the “pathogenesis” of modernity.⁷ By analogy, this essay offers a semantic exploration into what one might call the pathogenesis of the modern concept of “climate.” Importantly, my aim is not to study actual fluctuations in temperature through time, along the line of climate history, nor do I intend to trace the development of climate as an idea in the fashion of intellectual history. Contrary to an ‘idea’, which can be said to remain relatively stable through time and may be expressed in a variety of ways, a concept constitutes an abstract linguistic expression that can absorb multiple, conflicting meanings and that is therefore inherently ambivalent. While it emerges from a specific linguistic context, it raises claims to universality (which does not therefore mean that it *is* universal). And, finally, it is linked to a given vision of time. For Koselleck, a concept does not simply convey certain meanings but creates them.

To be sure, one can level a number of objections against Koselleck’s rather fuzzy measures for isolating the basic concepts of modernity. An attentive scholar will find semantic ambiguities, universalist claims, and temporal assumptions almost everywhere. In spite of such reservations, I would still like to maintain the specificity and value of conceptual history vis-à-vis adjacent fields. Recently, scholars including Lucian Boia, Mike Hulme, Paul Warde, Libby Robin, and Sverker Sörlin have done valuable work on the cultural history of the climate. What gets largely lost in their approaches, however, is the kind of sustained attention to the complex ligatures between linguistic forms and socio-political factors that still characterizes Koselleck’s work. Rather than tracing ideas that can assume various linguistic realizations across time, conceptual history focuses on how certain terms circulate beyond their original domains and accrue new, contradictory semantic layers in the process. The difference might be one of emphasis (discontinuity rather than continuity) but it is nevertheless pertinent.

In what follows, I will argue that, as a concept, “climate” is a product of the eighteenth century, when it started to embody the modern compulsion towards the future. I offer this argument as a corrective to the widespread view that the global climate only emerged recently with the rise of modern climate science.⁸ Such explanations, while not therefore wrong, strike me as too limiting insofar as they account for the emergence of the global climate as the product of scientific and technological advances (such as the development of general circulation models and the like) rather than of a larger experiential transformation of society—its reorientation towards an open future—of which climate science is but one manifestation among others. By projecting a longer time frame for the genesis—or pathogenesis—of the

⁷ Koselleck’s doctoral dissertation *Kritik und Krise*, defended in 1959 and published as a book in 1976, carried the subtitle “Ein Beitrag zur Pathogenese der bürgerlichen Welt,” which the English translation renders as “Enlightenment and the Pathogenesis of Modern Society.”

⁸ This view is evident, for instance, in Warde, Robin, and Sörlin, when they argue that climate as a global condition emerged very recently, in the final decades of the twentieth century (101). While the authors do point out significant precursors for this “idea,” the overall drift of their argument is to insist on its relative novelty.

modern concept “climate,” I do not therefore want to engage in anachronism, but rather mean to throw into relief the conflicting temporalities that remain co-present in the concept but that started to diverge during what Koselleck called the threshold period.

The Derealization of the Climate in the Threshold Period

Up until the early modern period, climates—typically in the plural—were conceived in spatial terms as latitudinal lines on a map derived from the calculation of the ecliptic. In this framework, they functioned primarily as tools of orientation, differentiation, and comparison. In antiquity, they demarcated the *oikumene* or inhabited earth. Since it was originally believed that neither the equator nor the poles were fit for human civilizations to develop, the ideal climate was assumed to be situated in the temperate zones between those extremes. Where exactly the ideal climate was located was a matter of continual dispute among geographers, whose biases often shine through in their accounts of climatic circumstances. However, what was beyond dispute was that the perfect climate should be somewhere in the middle, in a geographically localizable zone where the adverse effects of extreme heat and cold canceled each other out and thus generated the ideal conditions for civilization to flourish. Climates thus functioned to measure civilizational development and sanction empires. As Nicolás Wey Gómez has argued, the tripartite structure of ancient geography would prove remarkably persistent and may help us to understand the patterns of European empire building during the age of European expansion (Wey Gómez). Even as they were redrawing the boundaries of the inhabitable world, explorers and travelers relied on received geographical models, often for strategic reasons to justify their claims to new lands which, due to their position on the globe, were considered climatically overdetermined.

From the vantage point of conceptual history, two structural features deserve mention here. To begin, climates were primarily instruments of spatial orientation. They served to underwrite territorial boundaries. Second, the relation obtaining between them was generally one of contrariety: “genial,” “happy,” “serene,” or “exquisite” climates took shape in opposition to ones that were deemed “fatal,” “infamous,” or “wretched.” The fact that we no longer rely on this rich arsenal of epithets to qualify climates already suggests that this semantic regime has largely eroded. Its gradual decline can be traced back to the age of European expansion, when the inhabited earth as understood in the European imagination expanded dramatically. Travelers brought with them reports falsifying Aristotle’s claim that the tropics were not fit for habitation. It was during this period that the age-old assumption that climatic conditions were deemed similar within the same latitudinal circle became increasingly untenable. The establishment of the first European settler colonies in the Americas raised the question of hemispheric climatic variation, which compromised the explanatory power of the equal-latitude doctrine (Kupperman). As Europeans discovered that atmospheric conditions in the Americas were more extreme than those in corresponding latitudes at home, they came to understand the differences between continental and oceanic

climates, which upended existing models for organizing the inhabited world (Gerbi). On the level of semantics, one might argue that a gap opened up between experience and expectation, which would eventually result in the temporal loading of “climate” and its development into a historico-philosophical concept expressing modern society’s relation to time.

This semantic transformation completed itself in the course of the eighteenth century. At this juncture, the word climate became increasingly abstract and malleable. It was no longer understood exclusively in terms of pairs of territorially defined contraries, but instead came to denote the prevailing weather patterns of a given place, or the weather system as such. This shows, for instance, in Pierre Jean George Cabanis’s *Rapports du physique et du moral de l’homme* (1802), which offers a remarkably inclusive definition of the climate: “The climate, therefore, is not restricted to the particular circumstances of latitudes, or cold and heat; it embraces, in an absolutely general manner, the totality of physical circumstances attached to each locality; it is that totality itself” (Cabanis II, 246; my translation).⁹ To be sure, Cabanis’s thinking was still at some remove from that of present-day science as he did not conceive of the climate as a global atmospheric system. However, he already thought of “the climate”—in the singular—as more than simply places or zones on a map. Rather, the word now referred to all the surrounding factors conditioning the physical and moral constitution of individuals. As an Enlightenment optimist, Cabanis believed these factors were in turn amenable to human influencing, or, in contemporary parlance, “improvement.” With Cabanis, “climate” thus enters into public planning scenarios and acquires a temporal quality.

The novelty of Cabanis’s definition comes out if we compare it to that found in Bernhardus Varenius’s *Geographia Generalis*, first published in 1650 and later updated by Newton (the following quote is from the first English translation of 1733): for Varenius, “climate is the space included by two parallels, between the pole and the equator, into which when the sun comes, there is the difference of half an hour as to the length of the day” (II, 559). While Varenius invokes time here, his is still a relatively static definition that fits into a closed geographical imaginary. Varenius rejected the Aristotelian notion that the tropics were not fit for habitation. At the same time, he remained partly beholden to the experiential framework of classical antiquity, which divided the earth into territorially fixed climatic zones whose boundaries can be computed mathematically. Arguably, it is this fundamentally atemporal worldview that comes to be challenged in the course of the eighteenth century in the work of materialist philosophers such as Cabanis. As a result, what we denote by the word “climate” was transformed from a spatial entity into a process that, as the Enlightenment philosophers hoped, could be steered and possibly controlled.

⁹ The French original reads: “Le climat n’est donc pint resserré dans les circonstances particulières des latitudes, ou du froid et du chaud: il embrasse, d’une manière absolument générale, l’ensemble des circonstances physiques attachées à chaque local; il est cet ensemble lui-même: et tous les traits caractéristiques par lesquels la nature a distingué les différens pays, entrent dans l’idée que nous devons nous former du climat.”

One way of reading this development is in terms of the optimization of instruments (the thermometer, barometer, hygrometer, eudiometer, etc.), the accumulation of weather data, and the eventual formation of climatology as a scientific discipline. But, in my view, such technological advances do not suffice to explain the proliferation of the word's use at this juncture. Instead, we should consider its semantic trajectory in light of Koselleck's reflections on the mounting pressure of time during the so-called threshold period. Eighteenth-century philosophers and naturalists were obsessed with the mutual influencing of people and the climate. This was because, as a signifier of limitation, the concept intersected with emergent rights discourses and the modern, transnatural definition of history. As a result, "the climate," in its singular form, acquired unprecedented political significance. It developed into a marker of historical time, a formula for prognosticating and planning an open, contingent future. This would explain why climate discourse entered into virtually all domains—from medicine, to constitutional law, to the arts—in ways that are scarcely conceivable today. It accompanied the collapse of the old absolutist regimes in Europe and the creation of modern nation-states, which appealed to atmospheric conditions to define the citizenry and to manage it. Politicians measured the state of society against the state of the air as a crucial influencing factor on the happiness and well-being of the population. Anti-slavery activists, likewise, invoked the unhealthful and immoral "climate" of slavery to mobilize public support for their cause.¹⁰ Importantly, the concept could only fill this function because it had lost its original association with territorially defined circumglobal bands and had progressively become loaded with temporal significance.

The continued usefulness of conceptual history shows from the fact that we can mark out this transformation on the level of language. It shows for instance in the increasing use of "climate" as a freestanding term in the singular without a modifier or complement, or the coinage of new words such as "acclimatization" (as in the British acclimatization movement), "climatism" (particularly in the context of French colonial medicine), or "climatology" (which starts to circulate in the late eighteenth century). These derivations of the word "climate" already point to its dynamization and its increasing relevance to imperial politics and scientific programs. Further, in corpora of historical English usage, we observe shifts in the networks of co-associated words clustering around a token like "climate." Koselleck argued that some words might start their semantic career as one of the poles in asymmetric dualisms, but that they cease to function in such a way once they become more abstract and develop into collective singulars. From that moment on, they derive their legitimacy not from their opposition to an excluded other, but from political or ideological programs attached to them ("Introduction" 11). Oppositions such as those between "delightful" and "fatal" climates can be regarded as asymmetric counterconcepts in Koselleck's sense: they posit a

¹⁰ See Golinski for early republican debates in the United States on public health in light of the climate. In the 1790s, William Wilberforce invoked the African "atmosphere" that in his view distorted the morality of slave traders (Coleman 63).

territorially defined boundary between a climate ideally suited for humans and one that is considered unhealthy, extreme, or dangerous. During the threshold period, such qualifying adjectives, which serve to grade and hierarchize between territorially specific zones, do not disappear from the English language completely but they become less frequently associated with “climate,” and some fall out of usage altogether. At the same time, new collocations emerge, such as “moral climate,” which points to a widened application of “climate,” away from a physical location to the circumstances prevailing in that location. Climate here becomes an instrument of prognosis.

Crucially, the shift I have tried to sketch out above set in long before the emergence of modern climate science, which further intensifies modern society’s reliance on the future. Put simply, that shift can be summarized as the transition from a fairly static semantic regime designed to sanction a given order of things towards a more dynamic one that more fully incorporates a vision of historical change. The conceptual history of “climate” thus allows us make sense of the reorganization of experiential space in modernity generally, and its reorientation towards an uncertain but plannable future as described by Koselleck. This is of course not to suggest that the term climate had no temporal relevance at all before the onset of the threshold period. Atmospheric circumstances have always been invoked to predict the destiny of nations and political entities. Exceptional weather events were interpreted as omens of disasters to come. But such predictions were still largely embedded in the old, cyclical semantics of time. This regime was eventually displaced by one projecting time as linear, unpredictable, and constructible. Of course, as Stephen Jay Gould has argued, an overly schematic opposition between time as cycle or as arrow is misleading, since both conceptions of time often co-exist in the same epistemological framework (Gould). But, in spite of such reservations, I believe we can still observe a general trend towards temporalization or futurization in modern society as a response to increasing social complexity. My aim here has been merely to show how “climate,” which Koselleck did not include among his basic concepts of the threshold period, can be regarded as a central signifier in the broader reconfiguration of experiential space that his theory was designed to bring into focus.

Why, then, did “climate,” so defining for the emergence of the modern semantics of time, progressively lose its attraction in the course of the nineteenth century? Why did this expectation concept dwindle away, to the extent that it hardly figures in modern historical lexica, while others continued to flourish? We can point out a number of factors, beginning with the decline of neo-Hippocratic ideas in medicine following the rise of germ theory. Further, emergent disciplines like sociology, intent on asserting their institutional legitimacy and specificity, showed a marked distaste for climatic explanations of the social.¹¹ To be sure, climate theories continued to be produced (for instance, in the work of the students of Friedrich Ratzel and the determinist school in geography), but they no longer enjoyed the same generalized acceptance as during the threshold period. Not surprisingly, the nineteenth-century semantic trajectory of

¹¹ See, for instance, Durkheim’s *Le Suicide*, which dismisses “cosmic” factors in suicide statistics.

“climate” is inversely proportional to that of “environment,” which is attached to a more dualistic worldview. Likewise, the new earth sciences, which challenged the biblical origins narrative by projecting much longer timescales, disqualified explanations of human diversity and evolution in terms of the climate as unscientific.¹² Climatic influencing, if not rejected altogether, was now understood as a slow and gradual process that could only be grasped by means of large data. Scientific developments thus might have insulated us from climatic variations and differences, while also taking away some of our agency in shaping and policing those conditions.

Possibly as a result of such developments, people ceased to read exceptional weather events for cosmic significance but instead assumed the continuity and constancy of the climate. The Swedish chemist Svante Arrhenius, who is credited with discovering global warming, reasoned, much in line with the findings of contemporary glaciation theory, that human life on earth coincided with a “genial time” succeeding the ice ages (Arrhenius 20). In this framework, the oppositional structures distinguishing between “genial” or “happy” climates and their contraries dissolved. Or rather, as the latter were reconceived as potential or as yet unrealized genial climates, the opposition acquired a temporal component. For Arrhenius, Pliny’s genial season was generalized to encompass post-glacial time. At the same time, assuming that humans were not capable of fundamentally altering the climate on a global scale, Arrhenius was unable to fully imagine the implications of his own findings regarding the anthropogenic forcing of the climate. As time was reconceived as contingent rather than predetermined, climatic stability became the unspoken bedrock of the modern age. With the looming catastrophe of global warming, however, we can no longer confidently assert that we are living in a genial time, or at least, we have to envision the possibility that this genial time might be coming to an end.

The Temporality of the “Climate Crisis”

This raises the question as to whether we are about to cross another epochal threshold, resulting in a new refiguration of established conceptions of time. In my view, Koselleck’s philosophy of history, in spite of the problems pointed out above, provides us with a potent framework for interpreting this particular juncture. One of Koselleck’s most compelling and controversial hypotheses, partly derived from Carl Schmitt and Karl Löwith, is that the modern experience of the self-acceleration of progress constitutes a secularized version of the theological doctrine of the cosmic foreshortening of time. What both of these narratives share is that they respond to the human experience of temporal acceleration. Yet, in other respects, these two semantic frameworks logically exclude each other: whereas religious eschatologies conceive the end of the world as a prelude to God’s Final Judgment, the secular narrative of progress reinterprets this apocalyptic narrative historically. In the secularized version of the

¹² Darwin insisted that “the degree of adaptation of species to the climates under which they live is often overrated” (139).

Apocalypse, it is not God but humanity itself that provokes the acceleration of time. This process of self-acceleration, moreover, depends on, and is measured against, continuous and universal chronological time (*Zeitschichten* 189). In other words, the Final Judgment is no longer located in the realm of the sacred, but rather gets woven into secular history itself. As a result, the theological idea of the Final Judgment gets normalized as a central ingredient of the modern temporal consciousness.

While Koselleck's hypothesis of the secularization of eschatology is vulnerable to all kinds of objections, it is still a stimulating thought experiment to pursue, specifically in the context of the climate change debate, if only because the narrative of temporal acceleration, and humanity as the main instigator for this process, is so prevalent in media coverage of this phenomenon.¹³ On a daily basis, we are reminded that we are racing towards a do-or-die moment, when we will have to choose between a brighter future and a permanently uninhabitable planet. The scientific findings that come to us through the mass media continually outdate themselves by indicating that the situation is much worse than originally anticipated. Climate change fictions overwhelm us with anticipatory melancholia about the looming end of humanity. The reactivation of the semantics of climate in recent decades, after its long submergence over more than a century, shows how this concept, which originally signified limitation, has now come to function as a vehicle for expressing the modern, immanent experience of self-acceleration. Without therefore disputing the findings of climate science or disavowing the sentiments of pre-loss that the looming threat of a warming planet engenders, Koselleck's philosophy of history allows us to highlight how the conceptual framework through which we approach these issues reflects the modern temporal consciousness that it simultaneously diagnoses. To be sure, by pointing to the dramatic impact of human industry on the atmosphere, climate change communication radically critiques the historical optimism embedded in the modern progress narrative. In other ways, however, it reinstalls this semantic model by adopting an argumentative structure of acceleration and the multiplication of crises that is ingrained in the modern conception of time.

Symptomatically, the problem of climate change is now commonly understood as a "crisis" of global proportions. The phrase "climate crisis" emerged around the turn of the century. Climate activist Ross Gelbspan used it in the subtitle of in his book *The Heat Is On: The Climate Crisis, the Cover-Up, the Prescription* (2000). Not much later, Al Gore picked up the phrase in an address delivered to the New York School of Law in September 2006, where he argued that "we are now facing a planetary emergency—a climate crisis that demands immediate action to sharply reduce carbon dioxide emissions worldwide in order to turn down the earth's thermostat and avert catastrophe" ("Finding Solutions"). Gore's use of "climate crisis" should be read as a deliberate rhetorical move to gain political support for his suggested policies.

¹³ For the classical critique of Koselleck's secularization thesis, see Blumenberg. For a recent critique from the perspective of medieval studies, see Davis. As Olsen notes, Koselleck's later writings (most recently translated under the title *Sediments of Time*) considerably nuance his earlier views on the self-periodization of modernity.

Significantly, there is still no trace of it in his 1992 book *Earth in the Balance*, where “crisis” only occurs in conjunction with the terms “ecology” and “environment.” However, in the foreword to the 2006 edition, Gore emphatically defines the situation in terms of a global “climate crisis.” Invoking the double meaning attached to the Chinese expression for “crisis” as both danger and opportunity, Gore here suggests that global warming presents an opportunity for this generation to embrace a common cause and what he calls “the exhilaration of a compelling moral purpose” (*Earth* xix). More recently, activists such as Naomi Klein, while by no means committed to Gore’s centrist politics, have likewise embraced the phrase “climate crisis” and its capacity for collective mobilization (Klein). At present, the phrase is routinely invoked in media coverage of global warming.

What, one may ask, are the implications of conceptualizing our relation to the atmosphere in this way? To address this question, we may draw inspiration from Koselleck’s own reflections on the concept “crisis,” which seems to have preoccupied him from the early beginning of his academic career. In his first book *Critique and Crisis*, he considered the common origin of these two concepts in the framework of the emergence of a bourgeois philosophy of history. He returned to the topic in the third volume of *Geschichtliche Grundbegriffe*, published in 1982, to which he contributed a lengthy lemma entirely devoted to the conceptual development of “crisis.” Koselleck here describes in more general terms how the concept “has become the fundamental mode of interpreting historical time,” to the extent that it can be regarded as “a structural signature of modernity” (“Crisis” 371-2). Finally, in 1985, he once more revisited these ideas in a lecture entitled “Some Questions Regarding the Conceptual History of ‘Crisis,’” which will be my base text here.¹⁴ In its original application, the word “crisis” had primarily medical applications, denoting a life-and-death situation that called for an instant response from the physician. The idea of making judgments was thus from the beginning part of the word’s meaning, which significantly shows its close affinity with climate. In its original use, as indicated above, climate equally involved drawing distinctions and boundaries between temperate and intemperate, healthful and sickly, places. From this perspective, the collocation “climate crisis” almost reads as a tautology of sorts (commonly used expressions such as “crisis atmosphere” reflect this shared lineage). It is thus interesting to observe that these two concepts have now once more coalesced in the context of global warming.

As Koselleck documents, crisis eventually migrated from its original semantic field to other domains, such as theology, where it denoted the Final Judgment, and politics, where it could refer to a decisive change in the balance of power. However, it is only during the threshold period that the word starts to proliferate and enters into everyday, non-specialized language use. For Koselleck, this suggests that, the word now offered a “diagnosis of time” (“Some Questions” 239). Two elements are distinctive for this semantic transition. First, it rests on a sharp distinction between past and future,

¹⁴ I use the translation that appeared in the 2002 collection *The Practice of Conceptual History*. For a useful introduction to Koselleck’s writings on crisis, see Richter and Richter. For a more sustained engagement and application to the economic crisis of 2008, see Roitman.

which is imagined as radically different from everything that has gone before. And, second, it entails an urgent call to articulate a response to this new reality, to foresee and prepare for its coming. As Janet Roitman puts it, the concept of crisis in this sense “*posits history as a temporality upon which one can act*” (Roitman 7; italics in original). One can clearly discern these two structural dimensions in discourse on the “climate crisis.” To begin with, this discourse reflects a sense that we have arrived at an epochal threshold. The ongoing debates on the Anthropocene as the name for a new geological epoch in which humanity has started to irreversibly alter the climate highlight this functionality of “crisis” as an instrument of (self-)periodization. But, related to this, most climate change communication also contains more or less explicit ethical injunctions to do something about the escalating situation.

What is essential to note about such crisis narratives, from the vantage point of Koselleck’s somewhat schematic but nevertheless heuristically useful modernization thesis, is that they spring from a world-immanent interpretation of time; that is, they locate the end times not in a transcendent realm but in history itself. This means that any crisis narrative predicting the end of the world as we know it is vulnerable to the charge that it constitutes a “perspectival illusion” (“Some Questions” 244). Arguably, one reason for today’s seemingly insatiable appetite for crisis narratives about melting glaciers, floods, droughts, and the like, is precisely that the idea of an absolute end to history is no longer credible in the modern, immanent conception of time, which, paradoxically, allows for the unbridled dissemination of often incompatible end times narratives. If only through their sheer diversity, these narratives indirectly contribute to the open future that they simultaneously foreclose. Koselleck’s hypothesis of a secular eschatology moreover allows us to understand why global warming is so often thematized in conjunction with other crises. It is significant, for instance, that Naomi Klein describes her commitment to the cause of climate activism as gaining urgency as a result of her own “fertility crisis” in mid-life (422). In this connection, we may also mention the cultural significance of phenomena such as the school strike for climate movement. Perhaps not coincidentally, the emergence of childhood as a viable identity position towards the eighteenth century derived from the same processes of temporalization that also produced the modern concept of climate.¹⁵ This connection appears, for instance, in the pronouncements of action groups such as Fridays for Future, which reinforce the generalized sense of crisis inherent in the modern vision of time in such sloganesque statements as “we must escalate together” (Thunberg). By thus claiming a form of enhanced enlightenment for the new generation, such crisis narratives indirectly betray their indebtedness to the modern temporal schema of linear progress that they at the same time hold accountable for the “climate crisis.”

However, Koselleck does more than simply insist that such secular apocalypticism constitutes a fallacious interpretation of history. In a remarkable turn, he argues that the multiplication of crisis narratives in modernity might itself “be

¹⁵ On the eighteenth-century discovery of childhood as a manifestation of temporalization processes in modernity, see Lepenies (who connects the work of Koselleck with that of Philippe Ariès).

comprehended as crisis ... decisions are due, scientific or not, wanted or unwanted, which will determine whether and how survival on this earth is possible or not” (“Some Questions” 245-6). While these words were written in response to the nuclear weapons race and the threat of mutually assured destruction, they are no less pertinent to the so-called climate crisis today. The accumulation of crises in modernity is thus not purely a perspectival illusion but might indicate that we are reaching “a limit ... that can no longer be overstepped by technological and scientific progress” (247). Most climate advocates will be receptive to this dire prognostication, and will take it as a call to find alternatives for the modern growth narrative. But what Koselleck’s intellectual endeavor asks us to attend to is that, on the level of semantics, modern crisis communication is itself partly complicit in the expedition of the final crisis. Koselleck concludes his essay in his characteristically epigrammatic style by suggesting that we might not be capable of addressing the final crisis of humanity in purely secular terms, thus hinting at the continued relevance of nonsecular conceptions of time. In my view, this admittedly suggestive conclusion resonates in interesting ways with Amitav Ghosh’s recent argument that only religious movements will be capable of mobilizing support for the climate cause, since, contrary to international law and politics, they allow us to question the idea that, as Pope Francis phrases it in his encyclical *Laudato Si*, “human freedom is limitless” (Ghosh 159).

Yet, Koselleck’s position should not be interpreted as a call for a return to traditional forms of knowledge. Indeed, as he repeatedly insisted, the aim of conceptual history is not simply to isolate the pathogenic roots of modernity, but to analyze the temporal structures that “define as unreal the empirical content of both theological eschatology and historico-philosophical utopias” (*Futures* 103). In the same fashion, he would probably insist on the unreality of the currently prevalent dystopian scenarios about climatic collapse. This is to say that what Koselleck’s work calls for is a more attentive examination of the contingent semantics undergirding our own predictions and diagnoses. In this regard, it is useful to examine the semantic trajectory of climate now that it has once again become one of the basic concepts organizing our political life. Today, we think of the climate self-evidently as a global atmospheric system on which humanity depends for its survival. We project a global future that is unpredictable, unique, and steerable. Even though it is agreed that climate change will affect more vulnerable nations and populations first, the assumption is that everybody will be exposed to its consequences in one form or another, which thus calls for concerted measures applied globally. While such measures are indeed necessary, we should also be wary of strategic interests hiding behind false universalist claims. In spite of its universalist overtones, the modern concept of “climate” has preserved its original function of evaluation and comparison. This shows, for instance, in debates about the allocation of climate debts and credits among developed and developing nations, or in the way environmental performance indexes distinguish between laggards and forerunners in the transition towards a new economy. As it did for the ancient Greeks, the climate marks the line between winners and losers. What, then, sets “climate” as a global metaconcept apart from its earlier incarnations is its abstract, transnatural

quality, which tends to blind us to its constitutive function of drawing lines and distinctions.

In this respect, it is vital to focus our attention not exclusively on the politicized rhetoric of climate change skeptics or deniers but also on what makes the word “climate” vulnerable to politicization in the first place. From the vantage point of historical semantics, a collocation such as “climate neutrality” is far from neutral. The same can be said about 2019 Oxford Word of the Year, “climate emergency.” The controversy surrounding the European Parliament’s decision, in the run-up of the UN Climate Change Conference COP 25, to declare a global “climate and environmental emergency” clearly illustrates that concepts do not simply convey reality but co-produce it. Following the European Parliament’s declaration, it was argued that this decision not only served to obfuscate the real work of transforming the economy, but might also be used to suspend basic human rights in the name of planetary emergency.¹⁶ Given this, we should be prepared to question the temporal presuppositions built into our own predictions of the future. However sophisticated, climate modeling is not free from bias or teleology. Put simply, such simulations are political in the sense that they issue from a conception of historical time that presents itself as natural while being temporally specific and contingent. Should it surprise that both radical bloggers and global asset managers alike now use phrases such as “climate progress”—as if making progress (however defined) is the natural and only way forward?¹⁷ The assessment cycles of scientific institutions follow their own, denaturalized logic of self-acceleration. By prioritizing the future over the past, the predictions of climate science invite new and incompatible perspectives, which might include the assertion that the climate is not changing at all. This kind of denialism is no less a response to the mounting pressure of time in modernity than the prognoses of climate scientists.

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Works Cited

Ariès, Philippe. *L’Enfant et la vie familiale sous l’Ancien Régime*. Plon, 1960.

Arrhenius, Svante. “On the Influence of Carbonic Acid in the Air Upon the Temperature of the Ground.” *GWR: The Global Warming Reader*. Edited by Bill McKibben, OR Books, 2011, pp. 19-32.

Blumenberg, Hans. *The Legitimacy of the Modern Age*. Studies in Contemporary German Social Thought. MIT Press, 1983.

Boia, Lucian, and Roger Leverdier. *The Weather in the Imagination*. Reaktion, 2005.

¹⁶ The word “emergency,” moreover, evokes different connotations in different languages. As German MEPs pointed out, the word “Notstand” has troubling connections with the Nazi era (Rankin).

¹⁷ “Climate progress” is the title of an influential blog by Joe Romm, a physicist and fellow of the Center for American Progress (Romm). The asset management company Schroders developed a “climate management dashboard” that measures “the progress being made towards decarbonizing the global economy” (Schroders).

- Boyle, Robert. *The Philosophical Works of the Honourable Robert Boyle*. 3 vols. W. and J. Innys, J. Osborn, T. Longman, 1725.
- Brunner, Otto, Werner Conze, and Reinhart Koselleck. *Geschichtliche Grundbegriffe; Historisches Lexikon zur politisch-sozialen Sprache in Deutschland*. 8 vols. E. Klett, 1972-1997.
- Cabanis, Pierre Jean Georges. *Rapport physique et morale de l'Homme*. 2 vols. Crapart, Caille & Ravier, 1802.
- Catholic Church, Pope Francis. *Laudato Si': On Care for Our Common Home*. The World Among Us Press, 2015.
- Coleman, Deirdre. *Romantic Colonization and British Anti-Slavery*. Cambridge University Press, 2004.
- Darwin, Charles. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. John Murray, 1859.
- Davenport, Carol, and Mark Landler. "Trump Administration Hardens Its Attack on Climate Science." *New York Times*, 27 May 2019. <https://www.nytimes.com/2019/05/27/us/politics/trump-climate-science.html>. Accessed 1 March 2020.
- Davis, Kathleen. *Periodization and Sovereignty: How Ideas of Feudalism and Secularization Govern the Politics of Time*. University of Pennsylvania Press, 2008.
- Doyle, Michael. "USGS Nominee Vows to Insulate Science from Political Pressure." *Science*, 6 March 2018. <https://www.sciencemag.org/news/2018/03/usgs-nominee-vows-insulate-science-political-pressure-0>. Accessed 1 March 2020.
- Durkheim, Émile. *Le Suicide, Étude de Sociologie*. F. Alcan, 1897.
- Gelbspan, Ross. *The Heat Is On: The High Stakes Battle over Earth's Threatened Climate*. Addison-Wesley Pub. Co., 1997.
- Gerbi, Antonello. *The Dispute of the New World; the History of a Polemic, 1750-1900*. Rev. and enl. ed. University of Pittsburgh Press, 1973.
- Geulen, Christian. "Plädoyer für eine Geschichte der Grundbegriffe des 20. Jahrhunderts." *Zeithistorische Forschungen/Studies in Contemporary History*, vol. 7, 2010, pp. 79-97.
- Geulen, Christian et al. "Roundtable: Geschichtliche Grundbegriffe Reloaded? Writing the Conceptual History of the Twentieth Century." *Contributions to the History of Concepts*, vol. 7, no. 1, 2012, pp. 78-128.
- Geulen, Christian and Christian Bermes, editors. *Politische Schlüsselbegriffe des 20. Jahrhunderts* (in preparation).
- Ghosh, Amitav. *The Great Derangement: Climate Change and the Unthinkable*. The Randy L and Melvin R Berlin Family Lectures. The University of Chicago Press, 2016.
- Golinski, Jan. "Debating the Atmospheric Constitution: Yellow Fever and the American Climate." *Eighteenth-Century Studies*, vol. 49, no. 2, 2016, pp. 149-165.
- Gore, Albert. "Gore Presents Major Climate Control and National Security Policy Speech." 18 September 2006. https://www.law.nyu.edu/news/GORE_CLIMATE_SPEECH. Accessed 1 March 2020.
- . *Earth in the Balance: Ecology and the Human Spirit*. Rodale, 2006.

- Gould, Stephen Jay. *Time's Arrow, Time's Cycle : Myth and Metaphor in the Discovery of Geological Time*. The Jerusalem-Harvard Lectures. Harvard University Press, 1987.
- Hulme, Mike. "Reducing the Future to Climate: A Story of Climate Determinism and Reductionism." *Osiris*, vol. 26, 2011, pp. 245-66.
- . *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*. Cambridge University Press, 2009.
- Klein, Naomi. *This Changes Everything: Capitalism vs. The Climate*. Simon & Schuster, 2014.
- Koselleck, Reinhart. *Kritik und Krise. Eine Studie zur Pathogenese der Bürgerlichen Welt*. Suhrkamp, 1976.
- . *Critique and Crisis: Enlightenment and the Pathogenesis of Modern Society*. Berg, 1988.
- . *Zeitschichten: Studien Zur Historik*. Suhrkamp, 2000.
- . "Some Questions Regarding the Conceptual History of 'Crisis'." *The Practice of Conceptual History: Timing History, Spacing Concepts*. Stanford University Press, 2002, pp. 236-47.
- . *Futures Past: On the Semantics of Historical Time*. Columbia University Press, 2004.
- . "Crisis." Translated by Michaela W. Richter. *Journal of the History of Ideas*, vol. 67, no. 2, 2006, pp. 357-400.
- . *Sediments of Time: On Possible Histories. Cultural Memory in the Present*. Introduction by Sean Franzel, and translated by Stefan-Ludwig Hoffmann. Stanford University Press, 2018.
- Kupperman, Karen Ordahl. "The Puzzle of the American Climate in the Early Colonial Period." *The American Historical Review*, vol. 87, no. 5, 1982, pp. 1262-89.
- Latour, Bruno. *Down to Earth: Politics in the New Climatic Regime*. Translated by Catherine Porter. Polity, 2018.
- Leibniz-Zentrum für Literatur- und Kulturforschung. *Das 20. Jahrhundert in Grundbegriffen. Lexikon Zur Politisch-Sozialen Und -Kulturellen Semantik in Deutschland*. www.zfl-berlin.org/projekt/das-20-jahrhundert-in-grundbegriffen.html.
- Lepenes, Wolf. *The End of Natural History*. New York: The Confucian Press, 1980. Print.
- Olsen, Niklas. *History in the Plural: An Introduction to the Work of Reinhart Koselleck*. Berghahn Books, 2012.
- Rankin, Jennifer. "'Our House Is on Fire': Eu Parliament Declares Climate Emergency." *The Guardian* 28 November 2019. www.theguardian.com/world/2019/nov/28/eu-parliament-declares-climate-emergency. Accessed 1 March 2020.
- Richter, Melvin, and Michaela W. Richter. "Introduction and Prefaces to the Geschichtliche Grundbegriffe." *Contributions to the History of Concepts*, vol. 6, no. 1, 2011, pp. 1-37.
- Roitman, Janet L. *Anti-Crisis*. Duke University Press, 2014.
- Romm, Joseph J. *Climate Progress*. Web. thinkprogress.org/climate?fbclid=IwAR1hkNsj3QPGb0wy4l7_FhIfN07KoOQ8W6IjTts7Jy6KXZQ7kg5Mj-RZ2c. Accessed 1 July 2019.

- Schroders. *Climate Progress Dashboard*. www.schroders.com/en/us/institutional/insights/climate-progress-dashboard/. Accessed 1 July 2019.
- Steffen, Will et al. "The Anthropocene: From Global Change to Planetary Stewardship." *Ambio*, vol. 40, no. 7, 2011, pp. 739-761.
- Tayag, Yasmin. "Trump's Ban on Climate Predictions Beyond 2040 Forgets About One Key Factor." 29 May 2019. www.inverse.com/article/56238-trump-climate-change-stifles-predictions-beyond-2040. Accessed 1 March 2020.
- Tichi, Cecelia. *New World, New Earth: Environmental Reform in American Literature from the Puritans through Whitman*. Yale University Press, 1979.
- Thunberg, Greta et al. "Young People Have Led the Climate Strikes. Now We Need Adults to Join Us Too." *The Guardian*, 23 May 2019. www.theguardian.com/commentisfree/2019/may/23/greta-thunberg-young-people-climate-strikes-20-september. Accessed 1 March 2020.
- Varenus, Bernhardus, et al. *A Compleat System of General Geography: Explaining the Nature and Properties of the Earth*. 2d ed. 2 vols. S. Austen, 1734.
- Warde, Paul, Libby Robin, and Sverker Sörlin. *The Environment: A History of the Idea*. Maryland 2018.
- Wey Gómez, Nicolás. *The Tropics of Empire : Why Columbus Sailed South to the Indies*. Transformations. MIT Press, 2008.