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# Proleptic Logics in Media Coverage of the IPCC Sixth Assessment Report

**Abstract:** The rhetorical figure of speech called prolepsis, describing a presaging of time and events to come, commonly appears in environmental communication and importantly frames the possibilities for action. Prolepsis is a figure employed in communication about climate change that demands attention in its various deployments, configurations, and, importantly, rhetorical inducements. Such inducements may rely upon feelings of hope or fear, and this study investigates the rhetorical and ethical conditions prolepsis may generate. A considerable literature studying the concept of hope offers great insights into climate change perceptions and behavior concerning climate action. The present study examines prolepsis to discuss how the figure's inducement of suasive effect through appeals to hope and fear shape the ethical horizons for action. We examine media coverage of the IPCC's sixth report, Part I, warning of the enormous impacts of the ongoing climate emergency and necessary climate action to mitigate the worst of these effects.

Keywords: climate action, climate change, figural logics, rhetoric of science

*Prolepsis* as a presage is a common rhetorical figure of speech appearing in climate change discourse that frequently narrates and marks anticipations. The figure acts as an important tool illustrating consequences that are otherwise difficult to perceive, either as a matter of their nature as risks imperceptible to human senses or as temporally extended risks beyond our normal capacities for attention and daily anticipation (cf. Beck, *Risk Society*). For example, the risks created by warming of a few degrees are a difficult measure for our baseline understanding of temperature differences, that is, a 25°C day might feel somewhat more comfortable than a 23-degree day. It is also difficult to personally experience and fully understand changes to climate temperature trends over the next 50 years, especially since those trends may not be realized over an individual's particular lifetime. Prolepsis, then, can render narratively for us those matters that are otherwise difficult to fully anticipate as a matter of our present living. In such uses, prolepsis is a feature of deliberative genres of speech, where we rhetorically invent possible futures, imagine ourselves inhabiting those worlds, and decide a course toward that future. Consider, for instance, Rachel Carson's powerful introduction to *Silent Spring*, entitled "A Fable for Tomorrow," a book that sociologist of risk, Ulrich Beck called "instructive and inflammatory" (*World at Risk*, 161). A "strange stillness," Carson's fable warns, will take hold while once beautiful roadsides full of vegetation and life are now "browned and withered vegetation as though swept by fire" (3). The world Carson imagines—the one, we might say, she presages—is a world where the consequences of modern risk have become increasingly apparent through loss of biodiversity. Carson's world is not, this is to say, a merely imagined world; it is a world persuasively crafted to address the urgency of this loss. In other words, Carson's presage is a persuasive technique to motivate people to act on the use of insecticides (or "biocides," she

might correct us) and other chemicals harmful to life. More than the mere pragmatics of getting a policy in place, Carson is aiming for a transformation in thought in readers. A fable, after all, offers a moral lesson.

With the release of the first part of the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report focusing on the physical science (hereafter AR6 for the sake of editorial simplicity) (IPCC, *Climate Change 2021*), proleptic logics have been augmented from Carson's distant warning by shifting the urgency of action from the distal to the proximal (forgive the anatomical, spatial metaphor). Put simply, presaging climate change and needed climate action is no longer the key rhetorical move, but, instead, the discussion focuses on the *now*. Yet, in an analysis of media coverage of the AR6 report, presaging—the kind of proleptic logic we examine here—remains an important rhetorical strategy. Further, the attention to the present moment, the now, and the urgency of climate action is rhetorically framed in terms of our inaction in response to previous proleptic messaging. That is, scientists and climate activists have been warning, often employing proleptic logics, of the dire consequences of inaction to lower emissions for, at least, decades. Now, to underscore the urgency of the situation, these previous forecasts, presages, etc., are looked back on as rhetorical evidence of the consequences of inaction. When we fail to act on the proleptic logics, an analeptic logic (or a flashback; e.g., the recounting of how Cobb Vanth obtained Boba Fett's armor in *The Mandalorian*) (Favreau), recalls the possibilities for action that once existed and no longer do to warn of the failure, once more, to act. From there a new proleptic vision renews the urgency and frames the terms for action, although sometimes action is now mitigation and adaptation to the seemingly inevitable impacts of climate change. This rhetorical-temporal strategy uses the presage and flashback—

prolepsis and analepsis—to create a suasive strategy to frame climate change action focus on the now yet also relies on a renewed proleptic logic to spur action. Combining urgencies of the central and proximal, the now and the almost-now, these proleptic logics help chart how climate action is framed and what suasive strategies might be effective in motivating such action.

In this study we examine news media coverage of the first part of the AR6 report prior to its release in August 2021 and immediately following its publication. Drawing especially on rhetorical theories of style as developed by Fahnestock, where figures of speech act as central suasive techniques epitomizing argument, but also a framework inclusive of cognitive, material, and relational aspects of figures following Jack, we ask: How is the figure of prolepsis used in media coverage of the AR6 report? First, we briefly review the different uses of the term prolepsis and how previous IPCC reports have been covered in the media. We then report the results of our figural analysis of pre- and post-AR6 release coverage, concluding with a discussion of the suasive strategies at work.

### **Prolepsis and The Proleptic Suite**

Prolepsis is a rhetorical figure of speech with considerable historical attention. Here we will not rehearse the figure's various treatments (see: Mehlenbacher) but attend to definitional questions such that they illuminate the rhetorical purpose here set out: to investigate presaging of destructions entailed by climate change. As a rhetorical figure of speech, prolepsis takes numerous forms, even if we restrict our attention to what is sometimes called the handbook tradition of rhetoric (see Table 1 for a summary of these three varieties of prolepsis) where

prolepsis appears in at least two varieties, and below we identify a third variety or sub-type often used in environmental communications.

Table 1 - The Proleptic Suite (adapted from Mehlenbacher)

<b>Figure Name</b>	<b>Definition</b>
<b><i>Prolepsis (occupatio)</i></b>	An argument in objection to the speaker's is anticipated and rebutted (may be anticipation of audience objections or of an opponent's objections)
<b><i>Prolepsis (ampliatio)</i></b>	An event is foretold that has already come to pass (a kind of future anteriority)
<b><i>Prolepsis (praemonitio)</i></b>	Presage, a forewarning of potential future. Often an undesirable portent but may have a positive valence.

The first variety of rhetorical prolepsis is found in the formulation of a speaker anticipating counter arguments an opponent may make or even objections the audience may have in mind. Thus, this variety of prolepsis allows a kind of framing of the matter or crafting of objections by the speaker, rendering them less effective because they have already been offered and considered. Besel considers the United States' Climate Stewardship Act (CSA) of 2003 using *prolepsis* (also called *procatalepsis*) to investigate how the argument strategy failed or suffered from what he calls a "proleptic miscalculation." Although there was much promise in such a bi-partisan alliance, one that generated widespread public, political, and even corporate support, the CSA was defeated when brought to a vote in the Senate. Besel examines how a restricted use of prolepsis, in his work referring to anticipating an opponent's arguments, failed. The figure, he reminds us, is not merely stylistic but a powerful figure for environmental discourse. One must, however, be cautious about its use and understand the importance of considering a full range of counterarguments. We will not here discuss prolepsis as procatalepsis at length but see parallels

between Besel's analysis and cautions and our own exploration of prolepsis-as-praemonitio (hereafter praemonitio is used to refer to this subtype). Specifically, we will discuss the importance of multiple anticipations as part of the narrative possibilities and ethical horizons the figure might help in crafting.

A second variety of prolepsis is found in literary and religious texts. As a literary technique, prolepses can be used when the character's futures are already written in certain types of foreshadowing such as at the beginning of the film *Thor: Ragnarok*, when Surtur, a fire demon, tells Thor a prophecy of how Asgard will fall ("all will burn"), which, at the end of the film, comes to pass (Waititi, 01:44:00). In an example of flashforward, the film *La Jetée* offers a vision of a dying man, which is, in fact, the fate of man who remembers (analepsis) having this vision of an old man dying as a young boy (Marker). In religious texts a similar anticipatory prolepsis can be found. Rabbi Samuel Ben Meir (Rashbam) and Rabbi Eliezer of Beugency illustrate the patterns of prolepsis in scripture (Harris, 2009, 316–318, especially). These exegetes provide important insight into the rhetorical strategies at work in scripture to establish not only event sequences that provide earlier context for events that will unfold, but also to show how such patterning induces rhetorical effect by prefiguring the critical elements of the narrative and rendering implicit arguments about motives more visible. We will look at the third variety of prolepsis— praemonitio—in this essay, which we can call praemonitio (warning of a future time), where it is an exigence or urgency that demands that the future and past are wedded and rendered in a present deliberation (Brescó de Luna). Such a presage comes with a moral lesson

or warning. We can say, then, that praemonitio as presage marks a rhetorical strategy using anticipation to induce suasive effect in the face of uncertainty.

### **Time and the Ethical Horizons for Presaged World**

Although the praemonitio subtype is commonly found in cautionary environmental writing, the suasive function of this argumentative figure is often rendered as a choice. One can, that is, choose to act to better the environmental future through contemporary action. Carson's fable is not merely a charting of unfolding environmental damage, but a call for action to redress harms. The temporal configuration of the presage, of praemonitio, is such that it is a portent of the certain if we do not act, and thus compels us to act by making the distant nearer through a vivid description of future time. In other words, praemonitio is the suasive strategy of unfolding the urgency of the future now. The argumentative temporality enacted as praemonitio is, to a large extent, a promise but also offers the possibility of change through action. In other words, praemonitio deploys an argument strategy to create an exigence. Here we make something of a "linguistic (re)turn," following Katz, to attend to ethical components in language. Katz's framework is situated in sonic rhetorics, but it is temporality that underlies the moves he makes; he tells us: "a foundational "key" to sound (and ethics) is time" (3).

Katz outlines several assertions about time. Here we are not concerned with a scientific accounting of time and are drawn to the experience of time that Katz notes. This sense of experience and time has been the subject of consideration from T. S. Eliot's unpublished dissertation ruminations, Katz explains, on time back to the allied epistemological concerns that have "haunted Western philosophy," from at least Heraclitus (4). For Katz, the "force of time" is

essential to the linguistic and cognitive operations underlying sonic rhetorics, including poetics and music, but also in the creation/listening to “linguistic pockets of time” (6). In his model, Katz outlines prosodic elements of rhetoric and corresponding “sound-time” elements (see, especially, Table 1 in Katz). Among the prosodic elements, Katz includes figures of speech, but it is his orthographic ontology of the Hebrew aleph-bet, and specifically discussion of *vov* (ו) as *vov*-consecutive or *vov* of reversal that informs how we might understand the ethical entailments of *praemonitio*. Although *vov* is commonly translated to English as the conjunction “and,” Katz details the additional features of *vov* in the grammar of Biblical Hebrew as the *vov* of reversal. Notably, in this use, *vov* functions to change verb tense, not simply signal a progression or “*illusion* of simultaneity” (as we interpret and in English) (Katz 12, emphasis original). Because *vov* functions to change tense in this way it is a helpful example of how Katz argues “time is built right into the grammar and alphabet of Biblical Hebrew ... [the affect being] not only an alternate rhetorical theory and tradition, but timelessness, eternity in the text” (Katz 13).

Examining the rhetorical affect induced by *praemonitio* through a temporal lens that attends not only to the linearity of *chronos* and the punctuating *kairos* of the Greco-Roman rhetorical tradition, but to a sense of timelessness as Katz describes, a more complex understanding of the figure is revealed. *Praemonitio* functions differently from other subtypes of *prolepsis* (Table 1) in that it creates urgency in Event X (in Time A) by folding Event Y (in Time B) into Event X (Mehlenbacher, “Proleptic Suite”). That is to say, the future event and time must be lived in the present to induce rhetorical action. Brescó de Luna’s non-linear understanding of *prolepsis* in the (re)construction of collective memory illustrates “how the past is reconstructed according to different future goals in order to encourage and justify certain actions” (283). In this approach,

the function of prolepsis (the subtype we here call praemonitio) is to render the future in the present and this is contingent upon a (re)construction of the past through the collective work of memory. Understanding the work of collective memory in this affords the possibility of “examin[ing] the way groups use different narratives about the past as symbolic tools to guide (and on occasion mobilize) their actions in relation to different future goals” (Brescó de Luna 289). Implicated in this understanding of presaging in non-linear time are aspects of the ethical work praemonitio undertakes by rendering what futures are possible. We turn, then, to how the figure is used in coverage of the AR6 and the ethical entailments of those uses.

### **Praemonitio and Coverage of the IPCC Sixth Report from WG1**

Leading up to the August 2021 release of the first working group’s (WG1) contribution to sixth IPCC report, we identified key coverage of the report and how that coverage anticipated the contents and impact of the report. We examine news coverage of the AR6 report from two key moments: prior to the report’s release and following the report's release. We began collecting articles on July 28<sup>th</sup>, 2021, and we were specifically interested in those articles that primarily focused on the upcoming report rather than, for instance, broader discussions of climate impacts. The unit of analysis is the article itself, and we do not attend to comments, etc., or other features of the online news genre where they appear. We later began collecting articles on August 9<sup>th</sup>, 2021, and continued until August 10<sup>th</sup>, 2021, identifying articles that provided an immediate response to the report’s release (references for all articles can be found in the supplemental materials).

For our analysis, we define praemonitio temporally as Event Y occurs at Time B, and Event X (action to shape Event Y) is urged to happen at Time A (Mehlenbacher, 2023). We recognize this

is something of a flattening of the temporal-spatial complexity we discussed earlier, but to operationalize the figure for analysis, this is a functional heuristic definition. For example, from a *Reuters* news article with our operational definition overlaid: “The new [Time A] report [Event X] will forecast how much more [action sharing Event Y] emissions can be pumped into the atmosphere [Event Y] before the average global temperature rises more than 1.5 degrees Celsius [Time B]” (Chestney para. 3). Note that the sentence structure is not the focal point of analysis but the narrative elements. That is, we do not expect the definition to be applied simply to the grammatical aspects of the discourse, but to the narrative elements. Here, then, what is presaged is that continued output of emissions [Event Y] will cause temperature rises over a prior of time (“before”) [Time B] and that the AR6 report [Event X] to be imminently released [Time A] will “forecast” (read another way: urge action) to shape Event Y (output of emissions).

Consider the IPCC press release for the report, issued on August 9<sup>th</sup>, 2021, from Geneva. The release frames the report’s findings in terms of current changes scientists are identifying [we might call this Time A], the report’s call to action [we might call this Event X], the impact of ongoing changes [we can call this Time B], and the looming impacts of these changes [we can call this Event Y]. Consider specifically first the introductory paragraph of the release:

Scientists are observing changes in the Earth’s climate in every region and across the whole climate system, according to the latest Intergovernmental Panel on Climate Change (IPCC) Report, released today. Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the

changes already set in motion—such as continued sea level rise—are irreversible over hundreds to thousands of years. (IPCC, *Climate Change 2021*, para. 1)

In addition to these temporal moves indicating a proleptic suasive appeal, we see an interesting permutation on Event X framing, what we can call Uncertain Event X. Where Event X, the publication of the report and its urge to act now, provides a reasonably clear appeal to induce the rhetorical affect that will motivate an audience to action, Uncertain Event X provides fewer tools for action (e.g., “irreversible over hundreds to thousands of years”). This is a pivotal move to reframing the conditions for Event X, for the proleptic vision overall, as is indicated in the paragraph following in the release; consider the first sentence of the paragraph: “However, strong and sustained reductions in emissions of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases would limit climate change” (IPCC, *Climate Change 2021*, para. 1). This is the move from stopping climate change to mitigating its impacts, and the argument follows later in the release of how human activities have caused the rise in greenhouse gases, how the report provides deeper insights into the impacts of these emissions on climate and related systems and, importantly, presents a proleptic stance to urge action. Indeed, in the last paragraphs of the body of the press release, discussing human influence, the proleptic move is epitomized (see: Fahnestock) in the sentence “The report also shows that human actions still have the potential to determine the future course of climate” (IPCC, *Climate Change 2021*, para. 1). If we overlay the proleptic tagging we have developed we can identify each move: “The report [Event X] also shows that human actions still [Time A] have the potential to determine [Event Y] the future [Time B] course of climate” (IPCC, *Climate Change 2021*, para. 1).

To operationalize this definition, we used 10 overlapping codes to analyze the articles. In addition to coding for the overall figural instances of praemonitio and analepsis, we coded for Event X and Uncertain Event X. We further coded for what we called Portent, both negative and positive, or the presaging of future outcomes. Consider the following example, which demonstrates both a Negative Portent and Uncertain Event X: “Once-in-50-year heat waves now happening once a decade. Heat waves, droughts and torrential rains [Portent is negative] are only set to become more frequent and extreme as the earth warms further [Uncertain Event X]” (Spring). In this example, the actions needed to mitigate warming are unclear or uncertain. This uncertainty leads to anticipation of negative future outcomes, in this case heat waves, droughts, and torrential rains. In addition to Event X, we coded for Event Y and Multiple Event Y. Unlike portents, Event Y is the outcome that current actions, or Event X, aim to shape, not just futures we might anticipate. In the following example, Event Y is rendered as the result of actions taken now (i.e., Event X): “If global emissions hit net zero by the middle of the century—a commitment that many countries have made over the past year [Event X]—then the world can achieve the goal laid out in the 2015 Paris accord and limit global warming to 1.5 degrees over the course of the 21<sup>st</sup> century [Event Y]” (Tollefson para. 4). In cases where there may be several possible outcomes depending on the actions taken, we term this Multiple Y. Consider the following example illustrating a proleptic vision constructed with Uncertain Event X and Multiple Y: “in the worst case scenario [Uncertain Event X], warming will [Temporal Stance = Praemonitio] very likely reach 2.5°C by midcentury and continue to escalate to 4.4°C [Multiple Y 1]—and potentially as high as 5.7°C [Multiple Y 2]—by 2100” (O’Grady para. 5). Notice that the Multiple Ys denote several possible outcomes, each dependent on the kind of action prompted at Event X. Finally, we coded for the emotions of fear and practical hope. Note that

emotions and portents are coded with a key difference: portents refer to outcomes themselves (i.e., material events), whereas emotions refer to human reaction to these events. If negative or harmful events were anticipated, articles were coded for fear. However, articles were also coded for hope, specifically what Nussbaum (2019) would call *practical hope*. These are instances where hope drives action (e.g., planting trees, net-zero emissions targets being made law) rather than *idle hope* where there are no real solutions being proposed, for instance reporting that warming may still be controlled, but not providing actionable ways that this might happen.

We used Cohen's kappa ( $k$ ) to determine reliability between coders, a measure which ensures that agreement in coding was not merely a result of chance. The kappa values were assessed following where values of 0.81 or higher are considered almost perfect agreement, 0.61-0.8 to be substantial agreement, 0.41-0.6 to be moderate agreement, 0.21-0.4 to be fair agreement, and 0-0.2 to be slight agreement (Landis and Koch). Two raters coded a sample of the data ( $N=26$ ) for each code. Three cycles of coding, each using new samples and including both pre- and post-release coverage (we tested once on pre-release and twice on post-release coverage, owing to our overall sample size), were conducted to refine our definitions and examples and kappas were calculated for each cycle. For the praemonitio code, we determined agreement was "perfect," for analepsis "substantial" agreement, for Event X "perfect" agreement, and for Uncertain Event X only "fair agreement." For Event Y there was initially considerable disagreement about this code in the testing cycles. However, we determined this was due to poor definition, wherein it was unclear whether Event Y is a desired or suggested course of action rather than an actual outcome. When corrected there was still only fair agreement. Multiple Event Y saw somewhat better or "moderate" agreement. Coding for portent and emotions, which are very subjective

interpretations, proved to have low levels of agreement. Negative Portent originally had very low agreement but increased in the second cycle to moderate agreement. Positive Portent had “substantial” agreement in the initial cycle, which used pre-release data but fell in subsequent cycles to slight agreement or even disagreement. Both emotion-based codes were relatively mixed across coding cycles seeing only fair agreement. We identified numerous reasons for the challenges of quantifying emotion in this way, notably the subjective experience of coding for emotion, as well as questions about just what might be *practical* in practical hope.

### **Analysis of Report Coverage in Selected Media**

In the anticipations of the report’s findings, or the pre-release coverage, praemonitio appears in 90% of the 10 articles. Event X appears in 100% of the articles and Uncertain Event X appears in 40% of the articles. Analepsis appears in 80% of the articles. Event Y appears in 90% of the articles and Multiple Y appears in 50% of the articles. Negative portents appear in 100% of the pre-release articles and positive portents appear in 30%. Finally, the emotion of Fear appears in 70% of the articles and Practical Hope in 20% of the articles. Where praemonitio appears in pre-release coverage of the first part of the AR6, the focus is on reflecting on the past reports and responses (historical) by governments around the world (N=8), setting the stage for what is different about the upcoming report, as well as covering additional government and science reports/agreements (e.g., the Paris Agreement). In coverage of the report itself, following the report’s release, praemonitio appears in 100% of the 24 articles. Event X appears in 95.83% of the articles and the Uncertain Event X appears in 33.33% of the articles. Analepsis appears in 62.5% of the articles. Event Y appears in 33.33% of the articles and Multiple Y appears in 70.83% of the articles. Of the articles covering the release of the AR6, Negative Portent appears

in 95.83% while Positive Portent appears in 58.33%. Finally, the emotion of Fear appears in 87.5% of the articles and the emotion of Practical Hope appears in 29.17% of the articles.

Temporal Stance—*praemonitio* can appear alongside *analepsis* where the *analepsis* allows for engagement with once-proleptic narratives. Consider this example of our own crafting: “in 1990 the IPCC report [Event X] told us [urge to take action] that Event Y could happen [Time B] if we did not then take action [Time A], and this has come to pass [Time B moves into the present Time A; or Time C], now [Time A] the new report implores leaders to take urgent action [Event X] to avoid [the new Time B; or Time D] catastrophic impacts [Event Y(new)].” Another example illustrates our case for these figural entanglements: “The world is a different place since the IPCC’s last comprehensive overview [Event X] in 2014 [Time A] of global heating [Event Y], past and future [Time B]. Lingering doubts [Event X response] that warming was gathering pace or that climate impacts are tomorrow's problem [Time D] have since evaporated [Event X(new)] in the haze [Time C] of deadly heat waves and fires [Event Y(new)]” (AFP, 2021, para. 9). Put simply, the *praemonitio*-*analepsis* pairing allows for important temporal inversion that affirms the original proleptic move of *praemonitio* while accounting for the temporal unfolding that renders the presage as past but, also, renewed through the failure to act in response to the original Event X.

Event X and Y Framing—*praemonitio* is very much a constellation of moves operating to induce rhetorical effect, and because they are inseparable moves, departures in the structuring of one of those moves can have rhetorical consequences. Although *praemonitio* concerns the uncertain insofar as the future is yet-to-be, the figure operates within the realm of the (mostly) knowable

(unlike, for example, subtypes of the rhetorical figure that deal with literary effects, where the future is typically already written). Event X in the operations of praemonitio is, of its moves, certain insofar as the rhetor compels through this move the audience to action (to shape the yet-to-come but presaged Event Y for a more favorable—in the rhetor’s view—outcome). When the certainty of Event X is shaken, or difficult to envision, we describe this as Uncertain Event X. This is important because it marks a departure from the figure’s commonest uses and has practical consequences to how it might induce an audience to (in)action and, thus, change its rhetorical effect. Consider an article quoting Kelly Levin from Bezos Earth Funds saying, “The report will cover not only the fact that we are smashing record after record in terms of climate change impacts, but show that the world today is in uncharted territory [Uncertain Event X] in terms of sea level rise and ice cover” (qtd. in Chestney para. 6). We further note the particular relationship of Event Y in rhetorical inducement through its relationship with fear-based appeals. Indeed, apocalyptic visions are not an uncommon deployment through praemonitio in environmental communications.

Portent—a kind of forewarning and, as the vernacular sense often indicates, this is frequently used as a kind of ominous presage, or an “omen.” Negative outcome (not emotions/feelings about outcome). Reasonably objectively bad outcome (e.g., widespread fires and floods). The future imagined is undesirable. Given the pressing nature of climate change, it is perhaps unsurprising that our dataset tended to contain more negative than positive portents. For instance, post-release coverage of the AR6 often heralded the report as a “code red” to prevent ominous visions of the future that included increasingly severe extreme weather events, melting sea ice, and rising sea levels. In a particularly chilling example, *The New York Times* reported on a future

where “Nearly 1 billion people worldwide could swelter in more frequent life-threatening heat waves. Hundreds of millions more would struggle for water because of severe droughts. Some animal and plant species alive today will be gone” (Plumer and Fountain, 2021). This is a particularly compelling example of what the future might hold if the actions encouraged by Event X (e.g., cutting carbon emissions) are not taken, an undesirable outcome will take place. Of course, the reporting is not devoid of optimistic outcomes, which may also appear under this category, in which case the future imagined is desirable. Event X may help us toward that future, but there is not an imagined dystopia if not taken. An example of this can be found in an *NPR* report covering the AR6 release: “Despite the disastrous descriptions of our hotter Earth, the new report also makes clear that it is not too late to curb global warming” (Hersher para. 13). This example suggests that, should actions encouraged by Event X be taken, there is still room for optimism. This is a feature of *praemonitio* broadly and may not apply (often) to the particular case of climate change; indeed, in the total sample of pre- and post-release coverage of the AR6 (N=34), Positive Portents appeared in just 50% of the articles while Negative Portents appeared in 97.06% of the articles.

Emotion—*pathos*, we know plays a critical role in communication, even of complex scientific information. Emotions can indicate hope or fear illustrative of the complex ways in which emotion is entailed by *praemonitio*. Martha Nussbaum discusses the concept of “hope,” arguing that there are two forms of hope. One is what she calls “idle hope,” and this is, she explains, like hoping that one will be published in the *Journal of Philosophy*, but never getting around to the work of writing the article. There is another form, what she calls “practical hope,” and this concerns the forms of hope that drive action. In this context, proleptic visions that communicate

practical hope will offer real, meaningful solutions to climate change. In the psychological literature, this practical form of hope can be understood as a “cognitive-motivational process (i.e., not explicitly affective or emotional) which is proposed to orient people toward goal-directed behavior” (Geiger et al. 2); although we, in this article, will use “emotion” in a non-technical/vernacular sense to talk about hope. In an NPR article describing the context and purpose of the IPCC report, as well as the report’s projected contents, the author outlines an optimistic scenario where “countries work together to develop low-cost, low-carbon technologies and put them into use quickly for everyone” (Hersher para. 13). Here, solutions to the climate crisis are not presented in broad strokes, but as specific actions that countries may take to limit warming in an equitable way. However, we noted, in the coding cycles, the question of “practical” hope raises the question of “practical for whom”? For instance, how much involvement can individuals have and how? Certainly, political engagement is important, but where a global response is critical, questions about how to engage in broader political discourse raise many questions for individuals most familiar with a particular country’s political system. Emotion, in proleptic visions, are human social-affective responses to material events rather than the characterization of events themselves. Consider the following excerpt from a media report anticipating the release of the IPCC report: “A leaked draft [Event X, the report urging action] obtained by AFP warns that climate change will [Temporal Stance = Praemonitio] fundamentally reshape life on Earth in the coming decades even if planet-warming carbon pollution is tamed [Portent = negative], and calls for [Event X, appearance 2] ‘transformational change’ lest future generations face far worse [Emotion = Fear]” (AFP para. 13). In the example, the emotion of fear (“lest future generations face far worse”) is induced by a negative anticipation of future events (“fundamentally reshape life in Earth in the coming decades even if planet-warming carbon

pollution is tamed”). Future events are portrayed as bleak (“even if” pollution is tamed life will be reshaped) and the emotional response to this is a sense of fear in the face of a looming, unpredictable, and seemingly unchangeable future event that will cause pain. This unchangeability is critical to our abilities to generate rhetorical action or not: as Nussbaum argues, the opposite of practical hope, is *fear*—the inability to engage with or take actions to change or interfere with a trajectory or series of events.

### **Practical Hope, Praemonitio, and Ethical Praxis**

Hayhoe, a climate scientist and IPCC author, in her book *Saving Us*, appeals to everyone to engage in talking about climate change as an important mechanism for generating climate action (see, especially, 213). The underlying message of her deeply rhetorical book is that it is connecting, relational communications based on shared values (cf. Cloud), not only facts, data, science, and similar abstractions-as-appeals and particulars-as-evidence, that persuade people to act on climate change. She notes, however, that another essential element to crafting such persuasive possibilities is hope. As Nussbaum does, Hayhoe distinguishes between forms of hope, including false hope (cf. Nussbaum’s “idle hope”), and “true hope,” “real hope,” or “rational hope,” which describes a hope that “accepts that success is not inevitable, or even entirely probable,” noting such a form of hope requires practice (243; cf. Nussbaum’s “practical hope” and, on “practice,” we find interesting parallels with various traditions of virtue ethics and the cultivation or habituation of virtues). Indeed, emotions, such as hope but also negative emotions, are important predictors of behavior regarding climate action, including policy action (Brosch 15). Studies moving beyond correlational relationships among affect and emotion and behavior change provide further evidence. Brosch notes that some studies subtype forms of hope and, when doing so, positive emotions may increase pro-environmental behavior as well as

policy support and other political engagements in contrast with a “false hope,” which is not motivated by action but denial (16). Another recent meta-analysis of research on positive emotions and behavior by Schneider, Zaval, and Markowitz shows promise for engagement. However, they caution that research indicating null results and even results where positive emotions (including optimism, humor, “anticipated gratitude,” pride, “warm glow,” and hope) do not indicate behavioral change with respect to pro-environmental outcomes, suggesting a singular approach is not warranted. Notably on the matter of hope, they find that some research supports hope as a motivating emotion whereas other research found hope decreased motivation to make pro-environmental sacrifices. Further, hope can be an important factor in those already interested in discussing climate change and action. Geiger et al. found that interventions that used “pathway-thinking” approaches, where one can see multiple ways to their goals such as developing interpersonal communication skills or what we here might call rhetorical skills to identify the available means of persuasion in a particular context, promoted greater hope and therefore engagement in climate change discussion. Leiserowitz et al. provide insights through their “Climate Change and the American Mind” survey about matters we can say concern practical hope and the pragmatics of action. In their report, they find that a small number (only 12%) of people in the United States think it is too late to act on climate change (3). Those who feel a personal responsibility to take action to reduce climate change impacts represent a substantial percentage at 65%, although only 42% think family and friends would find it “moderately” important that they do (Leiserowitz et al. 3).

Here we consider how the futures we craft in the deployment of praemonitio shape worlds envisioned through the temporal configurations of the presage. As the COVID-19 pandemic

continues to unfold, much discussion has occurred about the pandemic itself, the ethical decisions entailed, and what this pandemic might tell us about addressing climate change. Powerfully, R. Wasserman explains she does not “want to be a crisis-ethicist, making judgments in the grip of desperation, mitigating immoralities that might have been avoided altogether had ethics been considered before disaster struck” (para. 3). Ethics, she argues, should be a matter attended to not only when a crisis strikes but anticipatory and grounded in everyday living. Psychology must be accounted for, R. Wasserman argues, because “[e]mergency is a detriment to imagination, to empathy, to careful reasoning,” because many moral acts require duration, and because moral decision-making is a complex activity that requires time (paras. 6–8). Climate change discourse around mitigating the worst effects of the ongoing climate emergency, the climate crisis within which we already find ourselves, is not entirely unlike the pandemic situation. During the pandemic, “[b]y the time questions of ethics became salient, the most ethical course of action had already been foreclosed” (Wasserman, para. 15). Acknowledging the crisis within which we already find ourselves, the most ethical choices are already foreclosed. The “opportune time for an ethical intervention” has passed, as it had when the pandemic emerged (Wasserman, para. 15). Yet, in the case of climate change and action, the use of *praemonitio* in the IPCC report illustrates that in this long-unfolding series of crises, the opportunities for action have been deliberated upon carefully by numerous scientists and the options they have provided allow for mitigation efforts to be more than a crisis ethics, but an ethics comported toward caring about the most vulnerable, those in our communities and around the world, as well as the other animals in our ecosystems and those systems themselves. As we finalized this article, the second part of the AR6 was released, and offered even more dire warnings with its focus on “Impacts, Adaptation and Vulnerability” (IPCC, *Climate Change*

2022). Indeed, the important lessons about ethical thinking from the pandemic that R. Wasserman details can be applied to the climate emergency, with respect to acknowledging the limitations of the ethical choices we now face but, critically, also that there remains time to act (e.g., ensuring mitigation efforts but also bolstering healthcare access, addressing poverty, and other social injustices entailed in climate injustice) such that choices in the future are not more narrowly restricted. There is, in other words, some practical hope to be created that can generate climate action, not result in inaction. Such an imperative to act with attention toward the future is necessary for the kind of transgenerational work that climate change mitigation requires, which is to say the work that extends our ethical considerations from those who presently exist to those who will. Indeed, such a comportment to the potential beings, people yet to come is the kind of “transgenerational responsibility” required of our ethical thinking, as Andina argues, and one that allows for a kind of practical hope (involving governmental action) that serves as an antidote to the widespread climate anxiety, especially among youth (Hickman et al.). Praemonitio is a rhetorical figure of speech where ethical praxis can occur insofar as we are able to rhetorically induce actions leading to climate action.

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