



Climate change as a ‘hyperobject’: a critical review of Timothy Morton’s reframing narrative

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Climate policy, climate communication and cognitive science researches have identified that better ways of conveying the climate change story are needed; specifically, a new frame or narrative is required. There are also increasing calls for the arts and humanities to play a greater role in the ‘meaning-making’ task around climate change. Philosopher and literary theorist Timothy Morton has created a new approach, one which frames global warming as a ‘hyperobject’. Morton’s work demonstrates the value of artistic and philosophical approaches in helping people perceive climate change, as well as understand how it may feel. It opens up a potentially crucial discussion about ontology (the study of ‘Being’ and existence) illuminating the difficult emotional and conceptual territory humans must cross. His work is intended to awaken people abruptly but debate exists as to whether Morton’s approach is too harsh and disempowering, or whether it is the spur required for humans to adjust cognitively and emotionally to a new climate reality. Morton’s frame vividly captures human vulnerability, but his association of vulnerability with shame and humiliation is concerning. Morton’s narrative style, brilliantly evocative at times, is at others contentiously obscure. While this engenders what may be a necessary experience of dislocation, it also risks rendering his more valuable ideas impenetrable to many readers. © 2016 Wiley Periodicals, Inc.

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INTRODUCTION

While greenhouse gas emissions may have peaked in 2014–2015,¹ and although the Paris Agreement saw 188 countries agree to contain global temperature rise to 2.0°C, and even aspire for a 1.5°C target, commentary from the scientific community warns against complacency. With a start date of 2020 and no binding agreement or global price on emissions, Hansen, for example, has called the

Agreement, ‘a fraud... worthless words.’² The situation is parlous: 2015 was Earth’s hottest recorded year,³ yet disbelief in climate change remains high⁴ and there is ongoing ‘seepage,’ causing the severity of climate science messages to become muted.⁵ The concern is that global citizens do not grasp the urgency and magnitude of the task; hence, the Tyndall Centre’s recent exploration on ‘*The Challenge of Communicating Unwelcome Climate Messages*.’⁶

As can be expected with what has been called a ‘super wicked problem,’⁷ there are multiple reasons for the lack of an effective response to climate change; but the focus of this paper is on how the issue is framed. Climate communication research over the last decade, particularly that informed by cognitive science, has raised awareness of the critical role of

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framing in influencing how people respond to information, leading to calls for climate change to be completely reframed (Ref 8, p. 22) or for an improved overarching climate metanarrative (Ref 9, p. 125).

Climate-framing research reveals a complex, multilayered, and busy space. Hulme finds that climate change has collected so many meanings and associations, from endemic poverty to hyperconsumption, that it has created a ‘political log-jam of gigantic proportions’ (Ref 10, p. 333). Now extending from the mechanics of communication to the wider arenas of ideology and philosophy, climate-framing research occurs alongside a growing chorus of argument that the arts and humanities must be better mobilized for this task^{11–16} given their expertise in ‘meaning-making’ (Ref 17, p. 174).

In this context, this paper reviews one such attempt: Timothy Morton’s hyperobject theory.¹⁸ Morton’s approach is of interest for two reasons: the method he uses to communicate and construct a new frame, which is artistic and transdisciplinary, and the ‘frame’ itself and its conceptual dimensions. This review adopts a two-step process and, mirroring Morton, is also transdisciplinary. First, it overviews key findings of climate communication, framing, and ‘meaning-making’ research for insights into the elements of an effective frame. Then it analyzes Morton’s hyperobject frame in light of these findings. In doing so, it utilizes literary analytical methods rather than empirical measures. The intention of this review is not to overview the myriad types of climate frames—which has been done by others such as Hulme¹⁰ and Callison¹⁹—but to analyze one in depth and in the context, not of other frames, but of climate-framing research.

CONTEXT: APPROACHES TO CLIMATE COMMUNICATION, FRAMING, AND MEANING-MAKING SO FAR

Framing

‘Framing’ was defined by Bateson [1972] as that which ‘is (or delimits) a class or set of messages or meaningful actions’ (Ref 20, p. 186). Using the analogy of a picture frame, he explains how frames focus viewers’ attention and guide them to regard the contents within the frame differently from those outside it (Ref 20, pp. 187–188). These ideas were extended by Goffman, who described primary frames as ‘schemata of interpretation’ (Ref 21, p. 21), ways in which people organize their experiences. Groups, he proposed, are held together by ‘frameworks of

frameworks,’ which become their belief system, their cosmology (Ref 21, p. 27). Goffman discussed frame disputes, debates, and falsification in detail, explaining how individuals are prone to ‘flood out’ (become overwhelmed) when a frame breaks down. The 1980s saw more literature on ‘mental models’²² reiterating similar ideas.

In discussing climate change framing, it is worth distinguishing three broad, and interconnected, types of frames—discursive, problem-solving, and deep frames. Discursive frames reflect conscious points of view, such as an economic, indigenous, youth, or justice lens. Problem-solving frames introduce a pragmatic dimension and may be adopted consciously or unconsciously. For example, as Hulme discusses, although climate change is frequently framed as a ‘wicked problem,’ implying a need for multiple disciplinary inputs and approaches, in practice it has been primarily addressed using scientific and economic problem-solving methods, thereby inadvertently framing climate change in ‘modernist, techno-managerial terms’ (Ref 10, p. 351).

Cognitive science introduces a third classification—deep frames, which exist subconsciously. Metaphors, ‘miniframes,’ images, and emotions all exist as neural pathways, Lakoff explains, while the process of ‘neuron binding’ allows select neurons to fire together, creating a recognizable narrative or frame.²³ Lakoff distinguishes between simple frames (e.g., one which guides a person on how to brush their teeth), and deep frames that involve more complex and influential neuron structures that ‘hold’ a person’s guiding worldview, identity, and values. These new understandings of brain functioning, he proposes, fundamentally challenge traditional concepts about reason, formed during the Age of Enlightenment:

Real reason is: mostly unconscious (98%); requires emotion; uses the ‘logic’ of frames, metaphors, and narratives; is physical (in brain circuitry); and varies considerably, as frames vary. (Ref 24, p. 72)

The importance of emotions in building and strengthening neural pathways and influencing decision-making has been further explored by other cognitive scientists²⁵ and by moral psychologists.²⁶ Related to this are studies on neuroplasticity, which reveal that even deep, ‘embodied’ beliefs can be changed.²⁷

Climate Communication and the Individual

Within climate science communication literature, one prominent area of agreement is that a deficit, linear,

or facts-based mode of communication (which assumes more or better information will lead to opinion and behavior change), is fundamentally flawed.^{8,28,29} Cognitive and decision-science research has found that when it comes to attitudes, decisions, and behavior, people generally think and act in accordance with their underlying beliefs, even when presented with contrary evidence^{30,31} and regardless of intellect.^{32,33} Comprehension of scientific information remains a significant problem;³⁴ research on human sensory systems reveals that providing people with context is crucial (Ref 9, pp. 45–47), while the ‘unavailability heuristic’⁷ means people need help to imagine something outside their experience.

It has also been found that climate information can evoke strong emotional responses—fear, guilt, powerlessness, and despair—and that accounting for this is a delicate task (Ref 9, p. 64). Several studies have concluded fear messages and catastrophic narratives are largely ineffective,^{9,13,35} while framing information in terms of loss and uncertainty can be detrimental to motivating action—unless human efficacy is emphasized.³⁶ Other studies, however, draw on evolutionary psychology to argue that the problem is a ‘fear deficit.’ Tooby and Cosmides describes emotions as ‘superordinate programs’ that direct and coordinate a large range of subprograms such as ‘perception; attention; inference; learning; memory; goal choice; motivational priorities’ etc.³⁷ Applying this to climate change, Loewenstein concludes humans have not responded adequately to the threat of global warming because of a ‘failure to experience a level of fear... commensurate with the severity of the problem.’³⁸ Furthermore, he states, ‘insufficient emotion’ limits motivation to act and impairs people’s judgment.³⁹ This field of study also emphasizes the importance to longer-term decision-making of being able to imagine and feel the emotional consequences of particular outcomes. Philosopher Dale Jamieson similarly argues that evolutionary design inhibits humans’ ability to perceive and respond to global warming,⁴⁰ a point reiterated by Eagleman’s neuroscientific work on how human biological and sensory systems limit human ability to perceive the ‘*umwelt*’—the full nature of reality.⁴¹

The use of storytelling techniques offers potential. In overviewing how narrative or storytelling techniques have been used to communicate science, Dahlstrom finds that, while presenting some challenges, storytelling can aid the ‘comprehension, interest, and engagement’ of nonexpert audiences.⁴² Yet, generally, storytelling in science is approached with caution, with concerns about risks to scientific

accuracy⁴³ or distortion within the media.⁴⁴ These hesitations may limit the climate sector from realizing the potential of storytelling techniques when applied in a sophisticated and context sensitive way. The uptake of storytelling in other fields^{45–49} has been fuelled not only by practical success stories but again, by insights from cognitive science, neuroscience, and evolutionary psychology:

100,000 years of reliance on stories have evolutionarily hardwired a predisposition into human brains to think in story terms (Ref 50, p. 4).

Social and Political Sphere

Reviews of climate framing at public, national, and international level have led to greater awareness that science is not delivered into a neutral or vacant space, but rather one in which multiple values and narratives legitimately compete.^{9,10} As Nisbet argues it is ‘a matter of “frame” or be “framed”.’⁵¹ In the public sphere, the issue of ‘social identity’ is paramount. The division between climate ‘believers’ and ‘skeptics’ has been attributed to conflicting sociopolitical identities,^{4,8,33,52} while Norgaard’s work on ‘socially organized denial’ finds that communities ‘know’ about global warming but are disconnected from it at emotional and cultural levels.⁵³ ‘Belonging’ is an intrinsic human need⁵⁴ and psychological drivers lead people to associate safety with conformity to the norms of their cultural group (Ref 35, p. 12). As people are strongly influenced by their social identity, it is highly significant which stance on climate change (act now, later, slowly, or never) becomes the dominant narrative.⁵⁵ Yet achieving the dominant narrative involves power and political dimensions, as articulated by Klein⁵⁶ and illustrated by special interest groups seeking to erode the strength of the climate change message.⁵⁷ Clever reframing techniques and metaphor use, such as portraying climate science as an extreme religion,⁵⁸ have reduced public confidence in the science.⁵⁹

The public discourse on climate change is considered particularly ‘toxic,’⁶⁰ introducing other factors: the problem of climate agencies or spokespeople retreating into ‘climate silence’;⁶¹ climate seepage;⁵ the hardening of views caused by the psychological phenomenon of ‘myside bias’;⁹ and the related polarization that occurs when people are assigned labels such as ‘skeptic’ or ‘alarmist.’⁶² Ideas on how to progress constructive public discussions in a rancorous environment include shifting discussion from the science sphere to the public policy sphere (Ref 9, p. 110), preferencing ‘dialogue’ over ‘debate’⁶³ and

accounting for the difference in how close-minded versus open-minded people respond to debate.⁶⁴ Hoffman describes some climate change disputes as unresolvable ‘logic schisms’; addressing these ‘framing battles,’ he suggests, requires climate ‘brokers’ skilled in navigating multiple values and cultural perspectives.⁶⁵

The highly contested public discourse has one major implication for climate framing: the frame must be robust enough to withstand wide scrutiny and testing. This yields another conclusion: over time, it may be that the most successful frame is the one which proves the most reliable compass, that is most in tune with reality (truthful) and leaves no delusions.

Climate Policy and the Big Thinkers

Within climate policy literature, attention is turning to fundamental philosophical questions. Hulme suggests the crucial task is recognizing how climate change is ‘reshaping the way we think about ourselves, about our societies and humanity’s place on earth.’⁶⁶ Palsson proposes that ‘traditions of Western thought’ have reached their limits, and that it is the question of ‘how to think’ in a climate-impacted era that needs primary attention (Ref 15, p. 7). Both Palsson and Jasanoff point to human arrogance as part of the problem.^{12,15} In exploring how climate science becomes meaningful to people, Callison argues the necessity of ‘negotiation with ethics, morality, and meaning-making in individual and collective terms.’¹⁹ Other influential global thinkers and groups (e.g., Lovelock;⁶⁷ Diamond;⁶⁸ Klein;⁵⁶ Roy;⁶⁹ Piketty;⁷⁰ Pope Francis;⁷¹ and Islamic Relief Worldwide⁷²) question the ethical and philosophical foundations of the ideologies that shape the modern world. There is a general conclusion that these must shift if the world is to respond effectively to climate change.

This philosophical debate parallels broader discussions by sociologists on the end, or changing nature, of modernity, not only as a way of life but as a mindset or deep frame that acts as a brake preventing adequate responses to global warming and other global challenges. Beck characterizes the new era as ‘reflexive modernity’ or cosmopolitanism; a time when all sorts of boundaries collapse and the world is left with ‘zombie’ institutions, practices and thought constructs that no longer respond to reality.^{73,74} Bauman uses the term ‘liquid modernity’ to describe a fundamental shift from a grounded way of ‘being’ to one that is lighter and more fluid.⁷⁵ In *Love Your Monsters*,⁷⁶ an essay with some parallels to Morton’s work, Latour characterizes the modernization myth

of emancipation from nature as ‘absurd.’ He chastises ‘moderns’ (postindustrial era humans) for an irresponsible approach to their technological creations, comparing them to Frankenstein, whose ‘crime was not that he created a creature... but rather that he *abandoned the creature to itself.*’ In considering climate response, Latour also turns to ontology for answers⁷⁷ and elsewhere argues that the chief difficulty with global warming is a ‘crisis of representation’:

...we feel so powerless... because of the total *disconnect* between the range, nature, and scale of the phenomena and the set of emotions, habits of thoughts, and feelings that would be necessary to handle those crises.⁷⁸

Thus, for many theorists, climate framing sits at the highest philosophical level, of understanding and representing a new reality and enabling people to ‘think’ and ‘exist’ differently.

Figure 1 summarizes key insights from climate-framing research, illustrating four thematic categories: affect, narrative, concept, and philosophy. Ideally, a successful frame will address each of these dimensions and, in doing so, will utilize appropriate expertise. Tentative suggestions on such ‘solution providers’ are offered.

MORTON AND THE HYPEROBJECT FRAME

Morton in Context

Sometimes described as a post-Humanities scholar, English Professor Timothy Morton’s book *Hyperobjects* draws from an array of disciplines including quantum physics, relativity theory, climate science, modern art, and music. However, the knowledge realms he is most active in and informed by are literature and its associated theoretical fields (Literary and Critical Theory), and philosophy.

In response to climate change, the field of literature studies has undergone dramatic renewal.⁷⁹ Focusing upon theory, there has been a flowering of new approaches: Critical Climate Theory, Ecocriticism, Ecofeminism, post-Humanities and Telemorphosis, among others. As Di Leo states: ‘if theory cannot provide the premises to account for anthropogenic climate change, then we need to reject it wholesale—and seek premises that do...’ (Ref 80, p. 35). Into this vibrant enquiry, Cohen has introduced the concept of ‘disoccupation,’ the attempt to think outside prevailing ‘modern’ constructs of thought that, he argues, ‘unwittingly, persists in the

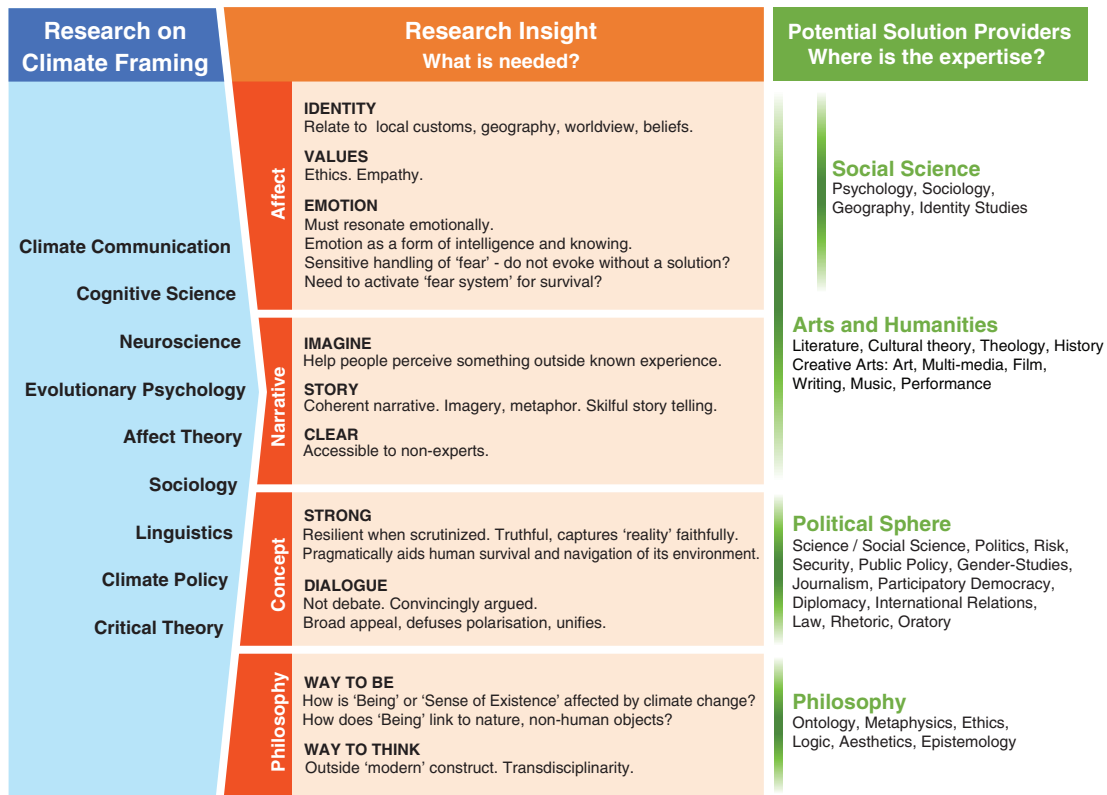


FIGURE 1 | Effective climate framing.

acceleration of destruction' (Ref 81, p. 16). Cohen singles out Morton as one of the few writers to find a way of disrupting redundant thought patterns (Ref 81, pp. 16–17).

Morton's earlier work on 'ecomimesis'—which informs the more ambitious *Hyperobjects* project—is well regarded, with Leonardi writing that Morton's 'critique of the "back-to-Nature" rhetoric is the most effective to date' (Ref 82, p. 74). Morton's ecomimesis concept, set forth in *Ecology Without Nature*,⁸³ refers to an unmediated way of looking at reality. It distinguishes between capital N 'Nature' (picturesque, static, passive, transcendental, 'over there') and an ecomimesis-informed lower-case 'nature' (intermeshed with human experience, sometimes degraded and inclusive of objects like 'mitochondria and viral DNA code insertions to blue whales, comets and earth's electromagnetic field').⁸⁴ True ecological awareness, Morton writes, means seeing nature not as 'some pleasant hippy utopia or healthy paradise' but acknowledging 'poisoned ground.'⁸⁴ As Carducci explains, 'for Morton, the aestheticization of nature is similar to how patriarchy claims to admire the feminine and yet controls it by circumscribing its field of action.'⁸⁵ Morton argues that

previous ecocriticism, influenced by the Romantic tradition, (poets such as Wordsworth and Shelley), adheres to the idea of a nature-culture divide whereas he seeks to remove 'containerizing' categories.

Morton's outlook is also heavily informed by philosophy—specifically ontology, which examines the nature of 'Being' and 'existence.' Here, he is most influenced by object-oriented ontology (OOO), defined by Harman,⁸⁶ which proposes a nonanthropocentric concept of 'Being.' OOO itself builds on the intellectual foundations laid by Martin Heidegger, who questioned the idea that humans were the central philosophical hub around which the universe revolved.⁸⁷ Heidegger contended that the nature of 'Being' varies depending upon whether one is considering a human, a nonhuman organism, or an inanimate object, labeling the unique human experience of 'Being' as 'Dasein.'

The OOO takes Heidegger's theory further. In simplified terms, OOO asserts not only that humans and nonhuman objects have different experiences of 'Being,' but that humans have equal existential status to other 'objects,' such as frogs, chairs, or planets. OOO also proposes that 'objects' can have agency; they are not necessarily bound by relations and

networks. Like Latour's Actor-Network-Theory (ANT), OOO links 'things', and 'ideas' in analyzing 'reality'; unlike ANT, OOO positions objects, rather than relations, as the primary locus of control (Bennett wonders why it could not be both).⁸⁸ Theoretical dimensions of OOO continue to be developed⁸⁹ and to interact with related discussions of 'Vital Matter,' 'Vibrant Matter,' 'Vital Materiality,' and 'New Materialism.'^{89–91} The essential insight, an issue that is understood scientifically, but perhaps not in a conscious, political, societal, or ontological way, is that matter is lively and exhibits agency—an ability to act of its own accord. When reviewing the hyperobject as a framing device, it is important to take into account that the merits of OOO remain a topic of conceptual debate.^{88,92,93}

What is a Hyperobject? What does it mean for Humanity?

Morton defines hyperobjects as 'things... massively distributed in time and space relative to humans' (Ref 18, p. 1); examples include nuclear waste, the city and concept of London, or global warming. They are distinguished by five key characteristics that collectively render them inaccessible to humans. 'Viscosity,' the first characteristic, refers to the 'honey-like' nature of a hyperobject—it 'sticks' to humans but also changes shape and form as people respond and interact with it. 'Nonlocality' represents the idea that a hyperobject is distributed across such vast geographical areas that it cannot be perceived in its entirety, disabling people's ability to make easy cause and effect associations. 'Temporal undulation' captures the planetary-relevant, (rather than human-relevant) timeframes across which hyperobjects operate, a feature that overwhelms human cognitive abilities: 'the timescale is a Medusa that turns us to stone' (Ref 18, p. 58). 'Phasing' extends the idea that hyperobjects cannot be seen in their entirety; the hyperobject only reveals parts of itself at any one time, and humans cannot know what phase state they are seeing. Finally, the term 'interobjectivity' describes the notion that hyperobjects are not experienced directly, but rather through an intermediary object; for instance, it is the effects of wind—rustling leaves and a banging door—which are heard, not the wind itself. Hyperobjects, Morton explains, operate not only through 'objects' but also through ideas, cultural stories, and historical memory.

Morton proposes that hyperobjects are so pervasive, large, and multidimensional and extend across such enormous timeframes that they have forever shifted humans' cognitive boundaries in

understanding existence. As though encased as a series of Russian dolls, humanity now finds itself 'in' the problem, not a neutral observer sitting outside it. 'There is no exit' Morton writes, comparing humans' situation to waking up and realizing that one has been buried alive (Ref 18, p. 130). The human is revealed as weak and lame in its inability to address hyperobjects. Humiliated humanity, Morton writes, must now concede 'more democratic modes of coexistence between humans and with non-humans' (Ref 18, p. 121).

UTILITY AND LIMITATIONS OF THE HYPEROBJECT FRAME

Hyperobjects is effervescent with ideas, however, this review will restrict itself to the question of how well it works as an alternative way of framing climate change, drawing upon the insights discussed earlier about the need to address the intertwined affective, narrative, conceptual, and philosophical dimensions.

Affect

'Affect' is used in its general sense, as a category of mental states which includes emotions, moods, attitudes, interpersonal stances and personality (Ref 94, p. 10) and thus loosely includes 'identity.'

Morton tackles identity at a deep philosophical level, exploring the very nature of *Dasein*—existence as a human being. In this respect, his work is reminiscent of Arendt's views that the modern era, in separating humans from nature, disrupted humans' sense of 'Being-in-the-world.'¹⁵ He reconceives the idea of humans as architects and masters of Earth: instead he characterizes them as weak, lame, and vulnerable. In 'humbling' the human, Morton addresses the issue of hubris, identified by climate policy analysts as inhibiting adequate responses to global warming.

Of particular importance is his contention that, in a global-warming impacted era, human identity involves a loss of human agency. The degree of this loss of agency is ambiguous: while the vast bulk of *Hyperobjects* powerfully depicts an infantilized humanity, Morton briefly turns at the end of the book to redeeming human dignity and agency, proposing a role for humans as the new 'guardians of futurity,' the stewards or curators of 'a gigantic museum of non-art' (Ref 18, p. 121). However, Morton's preceding emphasis on powerlessness overshadows this later, nuanced idea of reduced but still important human agency. Thus it is the imagery and feeling of impotence that readers are left with—Morton's 'dark ecology.'

Such darkness has led some critics to view *Hyperobjects* as a dangerous way to frame the global-warming discussion, one that risks instilling a sense of pessimism and weakening human hope, will and sense of efficacy.^{82,95} Daggett and Holmes worry that there is no ethical or values ‘life-raft’ for humans to cling to^{95,96} and again, while Morton does offer comments on this, they come so late and are so brief that, they have an afterthought quality that does not mitigate the impact of the powerful earlier writing. Yet a storytelling perspective cautions that humans learn from stories, fables, and myths, which often describe dangerous or unwanted scenarios. As Yusoff writes, they allow the reader a ‘meditation on risk.’¹⁴

Undeterred by potential ‘alarmist’ labeling, Morton’s approach in daring to describe the emotional and psychological impacts of global warming in depth is important. Morton takes a blunt approach to ‘fear,’ forcing the reader to directly and repeatedly confront the emotion as though he is treating them with exposure therapy. Readers are likewise provided a sensual experience of vulnerability and powerlessness. In Morton’s own terms, being able to perceive the emotional and aesthetic impacts of a threat, is a major part of understanding the threat: omitting or evading the terror or horror of an issue is ultimately a disservice to a humanity wishing to manage a precarious future. This approach may assist people in acquainting themselves with their feelings and accepting them as legitimate, thereby allowing, as Lakoff or Cosmides would argue, such ‘true’ emotions to assume their rightful role in guiding decisions.

However, while research highlights the importance of emotional signals, it also points to the need for emotions to be handled sensitively, and here Morton’s approach may need refinement. For example, Macy also argues that unconscious fears impede global-warming response, but advocates gentle, supportive ways to help people confront, process, and overcome such fears.⁹⁷ Furthermore, while Morton helps the reader experience ‘vulnerability,’ the way he links this to humiliation and shame is challenged by Nussbaum’s work, which explores the links between vulnerability, agency, neediness, shame, objects, and narrative.⁹⁸ Nussbaum proposes that vulnerability is not a shameful characteristic, but a natural part of the human condition; accounting for it appropriately shapes individual and societal decisions. Likewise, vulnerability researcher Brené Brown finds profound links between vulnerability and being daring, courageous, brave, passionate, and energized. She also warns about the poisonous impact of shame:

A sense of worthiness inspires us to be vulnerable, share openly, and persevere. Shame keeps us small, resentful, and afraid. In contrast, being daring requires exposure, acting despite vulnerability (Ref 99, p. 64).

Narrative

Considering *Hyperobjects*’ narrative or storytelling attributes, a clear strength is consolidation of the multiple strands of the global-warming story, (permafrost melt, megadroughts, ocean acidification etc.) into one overarching notion. This may be easier for people to grasp conceptually and have a mobilizing effect: with only one monster to face, humanity is better prepared psychologically; it now knows what this monster or threat looks like, feels like, and how it moves. Morton’s initial bold promise to provide answers about the new era provides an effective ‘hook’ for the reader.

When it comes to constructing a new frame, Morton’s writing style addresses many of the insights of cognitive science: creating and explaining new terms to capture new concepts, using metaphor and imagery, and providing cognitive tools to help people look at hyperobjects in a mode that matches the unique way in which hyperobjects present themselves. Perceiving hyperobjects is not like looking at the weather, or news footage of a flooded city, or the output of a Global Climate Model; hyperobjects are strange new entities that are viscous and interobjective. Morton’s writing addresses some of the comprehension barriers discussed by others, such as ‘systemic causation,’¹⁰⁰ ‘perceiving concepts beyond human scale,’¹⁰¹ and Latour’s ‘crisis of representation.’⁷⁸ Morton also accounts for the slow and physical way in which new deep frames are constructed and the sense of dislocation or unease this may evoke:

As anyone who has waited while the little rainbow circle goes around and around on a Mac, these upgrades are not necessarily pleasant. (Ref 18, pp. 100–101)

The clarity and accuracy of Morton’s prose are contentious. His writing style, described by one reviewer as a ‘collage, montage, “mash-up”...’ (Ref 96, p. 59) is, at times, exciting and visually brilliant, aided by pop references and an occasionally jovial, straightforward voice. At other times, however, the prose is impenetrable and confusing. At worst, Morton is accused of having a ‘messianic’¹⁰² tone or of being an obscure ‘snake oil salesman.’⁹² His rapid-fire

allusions to a myriad of complex philosophies and concepts can be frustratingly opaque—for example:

For it is Hegel who above all wants to paper over the Kantian-phenomenon-thing gap. Since I can think this gap, there is no gap—this is a too-short parody of Hegel's idealism. Simply allowing the gap to exist would plunge me into the night in which all cows are black, the dreaded pure negation of $A = A$. (Ref 18, pp. 167–168)

The issue of clarity can be viewed in two ways. If considered as a work of art—the provision of a creative experience to help readers undergo a deep shift in understanding their reality—attention should be paid to the artistic merits of his work. By using language that mirrors a world in which there are no straightforward answers, it may be that Morton provides the reader with a visceral hyperobject experience; a taste of a new way of Being (*Dasein*) which involves chaos, contradiction, being overwhelmed, humbled, and unable to understand what is going on.

As a scholarly work, however, the authority of the frame is diluted when readers notice contradictions and inaccuracies. These exist—such as Morton's criticism of Lovelock's Gaia hypothesis for being antihuman, while his own approach argues for the humiliation of the human; plus an incorrect description of 'wicked problems'¹⁰³ and of Rittel and Weber as philosophers (Ref 18, p. 135). Partly due to the transdisciplinary nature of his work, Morton exposes himself to criticism from a wide range of specialists and commentary from non-specialists. For example, literary experts both query¹⁰⁴ and endorse⁸² Morton's representation of scientific theories. One critic regards Morton's treatment of philosophy as thin in parts (Ref 96, pp. 60–61), while two others endorse his approach stating that Morton is 'not doing philosophy, he is sampling it'¹⁰² and that 'coherent references to Hegel, Heidegger, Deleuze, Derrida, etc., pepper the book.'¹⁰⁵ An archaeologist challenges Morton's assertion that humans cannot connect with hyperobject timeframes, suggesting that archaeologists 'often feel a close affinity with periods even earlier than 1500.'¹⁰⁶

The responses of the reading public¹⁰⁷ provide some insight into the effectiveness of Morton's narrative. While readers have commented that *Hyperobjects* provided them with 'a whole new lens,' 'illuminating concepts and ideas,' or 'an appealing and generative space for rethinking of "big" issues,' they were also flabbergasted at times, comparing reading Morton to listening to 'the ravings of a madman' or 'someone who drank too much coffee and is

pummeling you with all the ideas buzzing through [their] head.'¹⁰⁷ Whether positive or negative, though, these strong emotional responses to Morton's work contrast with the problem of climate 'story fatigue'.¹⁰⁸ Readers may be 'flabbergasted,' but at least they are engaged.

Overall, Morton treads a fine line. At times *Hyperobjects*' soaring, imaginative rhetoric creates clarity in concepts for which words perhaps do not yet exist. At other times the incomprehensible writing risks losing readers. It is possible that with clearer explanations, Morton could have provided a 'hyperobject' experience, conveyed transdisciplinary thought and still brought more readers along with him.

Conceptual

In considering the conceptual aspects of the hyperobject frame, two questions are germane: is it strong and true? Moreover, is it useful?

On strength and truth, one reviewer argues that Morton 'undercuts scientific denialism by demonstrating that hyperobjects are neither the result of human cognition nor subject to it'¹⁰⁹ However, Morton's contribution to the question of how to counter denialism might be more profound than this. Like a power vacuum, the lack of an adequate narrative to describe global warming to the general population has meant that its very nature, its hyperobject nature, has enabled it to be misrepresented, denied, or ignored. Morton's description may help readers understand 'how' to look at global warming and to recognize that while they may not be able to see and touch it, this does not mean it does not exist.

The frame reveals itself as particularly truthful when it is compared to the testimonies of people who have experienced natural disasters similar to global-warming impacts, such as the tsunami that hit Samoa in 2000:

The tsunami waves were described as sounding like machine guns (#20), rumbling like thunder (#26), loud vehicles (#28), a roaring jet airliner (#31)¹¹⁰

Traditionally, Samoan culture and lifestyle views the sea as a source livelihood; that it might 'turn on them' was a particularly harrowing thought and shook many small villages to their core.¹¹¹

Morton's framing captures these affective dimensions and a fundamentally altered relationship with the natural world.

One area where the truthfulness of Morton's frame might be debated is in its depiction of nature,

a central plank of Morton's work. While ecomimesis does not seek to divest nature of all of its beauty, but rather to demand the truth of its predicament be seen, it could be argued that *Hyperobjects* portrays mostly nature's ugly aspects—environmental degradation and global warming—and that the equally valid truth of nature's beauty is denied.

The practical utility of Morton's frame opens another line of inquiry. On a physical and factual level, aspects of Morton's theory can be easily disputed, and the merits of OOO infinitely debated (how do you compare a human's ability to design an iPhone with a migratory bird's ability to navigate across the globe?) Also, of course, on human's loss of agency and lame status, readers, although now conscious and perhaps embarrassed about their mere human-centric viewpoint, might feel an urge to protest. Surely humans can influence the situation? After all, they control the greenhouse gas emissions which fuel the hyperobject monster.

Yet, contentious as it remains, at a philosophical level, potentially this strange idea allows a conceptual gear shift that is important. For example, it asks humans to recognize that they may not know everything. That as a hyperobject, global warming *may* respond in ways beyond the ability of humans to conceive, let alone model. The conception informs humans that their existing structures and institutions—education, nation—states—and their ways of responding to global problems are inadequate; these must adjust to and accommodate the hyperobject, it cannot be the other way around. *If* humans can conceive this, they can factor it into their planning and response strategies. Like Latour's *Love Your Monsters*⁷⁶ argument, Morton advocates 'caring' for the hyperobject; the difference is that he proposes that this currently occurs from a position of weakness. Historical emissions mean that the technology-fueled 'hyperobject' child has now gained autonomy from its human parents. The potential pragmatic applications of hyperobject framing are hinted at in Pierides's analysis of one extreme weather event, a bushfire in Australia that killed 173 people. Pierides concludes that systems thinking approaches led to inadequate interpretations of early warning signals and that an OOO perspective could have offered a superior ability to anticipate surprises.¹¹²

Another test of the utility of hyperobject framing is to consider how it might inform the staffing, structure and tasks of 'Future Earth,'¹¹³ the global research platform which supports 'transformations towards sustainability.' *Future Earth* currently acts as a convening platform for 23 existing research

communities that together engage with around 60,000 researchers, predominantly scientists and social scientists.^{113,114} Might *Future Earth* devote resources to addressing the 'disconnect'—the gap between the level of threat posed by global warming (a 'hyperthreat') and people's ability to perceive this—and orchestrate a suitably proportionate 'hyperresponse'? Does *Future Earth* need to expand or partner with a similarly resourced organization which mobilizes 60,000 of the world's best story tellers, orators, philosophers, filmmakers, and other arts, and humanities experts?

Philosophical

Morton's frame grapples closely with the questions of 'how to think' and 'how to be'—identified as important in climate-framing research. On 'how to think,' Morton demonstrates 'transdisciplinary thinking,' or what Mušanović describes as 'a new kind of scholarship... a lesson and an exercise in how not to be modern' (Ref 115, p. 265). Morton rejects traditional 'top-down philosophy' (Ref 18, p. 155), which he views as imposing a cynical, distanced, or detached way of thinking, a meta-approach that no longer works:

We can't assert a transcendental metaphysics in the face of hyperobjects. They won't let us. They keep getting stuck to us (Ref 18, p. 180).

More radically, Morton argues that, at present, 'thinking' is redundant. Humans' preexisting, hard-wired, or deep frames are so mismatched to the new era that, until they can be upgraded, humans must rely on other ways of knowing, such as sensing and feeling—attuning:

...how do we talk to the unconscious? Reasoning on and on is a symptom of how people are still not ready to go through an affective experience that would existentially and politically bind them to hyperobjects, to care for them. We need art that does not make people think (we have quite enough environmental art that does that), but rather that walks them through an inner space that is hard to traverse. (Ref 18, p. 184)

Morton's proposal, that 'thinking' needs to shift to 'feeling,' aligns with Nussbaum,⁹⁸ who insists that the exclusion of emotions from philosophical traditions is a fundamental flaw. Pertinent to the field of OOO, her work examines the way infants form

relations with objects (the world and life forms external to themselves) and how this interaction forms the basis of emotional development. For Nussbaum, the emotional connection and impact of the style of interaction between object and person are pivotal in understanding the dynamic. Morton's approach, of helping people understand the 'sensory' dimensions of global warming, might also be compared with recent neuroscience conclusions research showing that 'knowing' begins with biological and sensory signals;⁴¹ the brain's interpretation of those signals is a secondary step. Thus, potentially, getting the sensory signals right first is important; an idea which may have implications for future climate communication research.

In considering 'how to Be,' Morton focuses upon what he perceives as the present great 'rift'—'the strange mixture of intimacy, grief, and overwhelmingness that is the current reaction to global warming' (Ref 18, p. 191). Between the death of the old ontology and the not-yet-arrived new version, Morton argues, there is a necessary transitional phase: humanity must deeply reflect. This has been criticized as too passive a response;^{82,116} but it may be a mistake to equate reflection with capitulation. In contrast to the rapid pace of modern life, time for deeper thinking, sensing, and feeling may be a valuable attribute of the new way of 'Being.'

The other key notion is that 'Being' now involves intimate awareness of danger and the stark, intimidating presence of global warming. It is here now. Not in the future. It has arrived. Morton scorns other framings that present global warming as being perpetually 'in the future':

By postponing doom into some hypothetical future, these narratives inoculate us against the very real object that has intruded into ecological, social, and psychic space (Ref 18, pp. 103–104).

CONCLUSION

In exploring the issue of climate framing, the work of climate communicators, cognitive scientists, policy

analysts, critical theorists, and contemporary philosophers converges on some key themes. They agree that the way in which 'moderns' think may be part of the problem. Moderns have been wrong about the way human reasoning occurs—emotions, values, social identity, and the unconscious are crucially important to how people make decisions and behave. Scientific and economic framings of the climate problem have underestimated the importance of deeper ontological, cultural, and psychological dimensions.

Morton's hyperobject narrative, although difficult to read in parts and sometimes contradictory, nonetheless contributes significantly to this discussion. Morton suggests that, at a very deep level, humans' understanding of their sense of existence, their *Dasein*, is being rocked and shaken. He also provides a narrative that describes the nature and 'feel' of global warming. He trains readers in how to see this sort of threat and to understand how it may operate. In Lakoff's terms, new neuron pathways are being established. The hyperobject Morton offers is not only conceptual, but it is also sensual.

Providing a visceral, 'scary' experience of what a climate-impacted world might be like is where the merit of Morton's work divides opinion. Some criticize this as destroying human hope, while storytelling and neuroscience perspectives suggests Morton's work may assist readers to better understand climate risk. Another uncomfortable aspect is his denuding nature, and the world, of its beauty—an OOO perspective that, for those not schooled in its nuances, does not discriminate between different forms of matter or life. Readers may resist this version of truth or reality as untenable, even repugnant. Potentially the greatest strength of the hyperobject frame is Morton's powerful depiction of human vulnerability—yet associating this with shame may be its greatest weakness. Reminiscent of the Renaissance era, when great thinkers like Leonardo di Vinci were artists as well as scientists, Morton's transdisciplinary approach is instructive on one other point: for true meaning-making to occur, the humanities and the sciences must unite.

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