



## Original research article

## Telling the story of climate change: Geologic imagination, praxis, and policy



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## ABSTRACT

Climate change has been described by Morton (2013) as a ‘hyperobject,’ meaning that its existence is too large for humans to perceive entirely. Climate change policy has been criticized as being bloodless and unimaginative (Watts, 2015), whereas stories have been used to understand climate change through lived experience (Rice et al, 2015). How can storytelling bring climate change policy into focus? Storytelling makes the symbolic visceral, creating a material experience. In many ways, stories connect the ‘out there’ to the here and now, while at the same time inspiring the critical capacity necessary to imagine a then and there, a task critical to policymakers. Using the concept of a geologic imagination as a conceptual springboard, this piece will explore the ways in which storytelling can help climate policy articulate climate change as a visceral, material experience. Though storytelling has been used to understand the day-to-day experience of climate change in peoples’ lives, this paper specifically aims to theorize the ways in which storytelling can be useful for connecting those experiences to the longer story of climate change and how these connections can enhance policy.

It matters what stories tell stories.

—(Haraway [1: 39])

## 1. Introduction

In Salman Rushdie's [2] *Haroun and the Sea of Stories*, he writes about the primordial source of stories. The Ocean of the Sea of Stories' currents contains all the stories that have ever been written and all those that are still forming. They are fluid and are able “to change, to become new versions of themselves, to join up with other stories and so become yet other stories” (72). Every story that has been told and any story that can be told lies in the Ocean of the Sea of Stories. As such, the story's hero, a young boy named Haroun, must save the world by saving its stories.

With regards to climate science, there is a geopolitical refrain: *the past is the key to the future* [3–5]. The phrase, popularized by paleoclimatologists and geochemists, refers to the idea that in order to predict the future or climate change there must first be a clear understanding of the planet's geologic past. Past events, such as the Paleocene-Eocene Thermal Maximum (PETM) when the Earth's warming pattern was most similar to our own [6], give scientists a baseline, a compass to traverse current climatic terrain. In this way, past geologic stories are invoked and re-told for the present. However, the fact remains that, while past climates have been similar, the rate at which our current climate has shifted due to anthropogenic causes is unprecedented. In other words, *this* story has not been told; its origins

may not exist in the sea of stories. While the past may be one key to the future, it may no longer be *the* key.

Thinking along these lines – that our current climatic predicament can be understood as a story – is to use what others have termed a “geologic imagination” [7]. Now, at the threshold of a new geologic epoch, one that has been created through unprecedented change, imagination is a crucial tool [8–10]. If climate change can be characterized as being a “hyperobject” [11] – something so expansive it is hard for humans to perceive in its entirety – then climate policy should focus on first making it legible. However, this is not always the case. While some have criticized climate policy for being bloodless and uninspired [12], others have gone so far as to argue that climate policy has become “post-political” [13], meaning that it elevates climate change and responses to it beyond democratic possibility. In either case, the way we largely come to know climate is through the language of science, but this is not a universal language [14]. Telling stories, however, is a shared experience. Stories make the symbolic visceral, the unknowable known. Moreover, the stories we tell – and who/what tells them – matter more than ever [1,15,16].

With regards to climate and energy policy, they are directed by scientific understanding and guide practice; however, they are often limited in their imaginative capacity [9]. As such, it is critical to begin the hard work of telling new stories. It is not the aim of this paper to pit climate science against climate stories. Rather, it is meant to see the two as intertwined, noting how the human dimensions of climate change are deeply enmeshed in global climate feedback systems. This paper

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will think of stories at an “Earth Magnitude” [17], meaning that it will see stories as long and sedimentary, spanning time and space, collapsing ‘science’ and ‘experience’ into one another. Using *geologic imagination* as a conceptual springboard, this paper will combine the theoretical worlds of new materialism and Gramscian political ecology to begin the process of (re)storying climate policy. If, as Wapner [9] points out, imagination is a critical tool for understanding and dealing with rapid climate change, what does storytelling offer in the way of a solution? Further, by focusing on the longer, geologic story of climate change, what new imaginaries and understandings develop with regards to climate and energy policy?

## 2. What does it mean for a story to *matter*?

Before continuing it is important to unpack what it means for a story to *matter*. When I initially saw the call for this special issue, I had recently attended a talk by Kamla K. Kapur, author of *Ganesha Goes to Lunch* (2007) [18], in a small café in Kathmandu, Nepal. The talk was in conjunction with the New School’s India China Institute’s *Sacred Himalaya Initiative* [19] and was meant to encourage dialog around the intersections of the sacred, storytelling, ecology, and sustainability. Kapur mentioned that storytelling is unique in that it connects the sacred and profane and thereby illuminates new pathways toward sustainability. Through our conversation [20], we also agreed that storytelling connects the symbolic to the material, meaning that the stories we tell – especially as they relate to the natural world – have real consequences. In short, they *matter*.

When this paper uses the word ‘matter’ it is invoking two usages of the word. On the one hand, ‘matter’ refers to the more traditional way that stories can be meaningful. This is especially important in the context of this paper inasmuch as storytelling is an avenue through which often-unheard voices can be amplified. To tell a story, in some cases, is to speak into existence alternative worlds and ontologies [21], which is crucial when working with imagination. On the other hand, ‘matter’ is used in this paper as a verb, meaning that stories make space for and create new worlds; they are simultaneously material and discursive. Barad [22] uses the word ‘mattering’ to refer to the material-discursive processes that make matter *matter*. In other words, ‘mattering’ refers to the way reality is created through the discursive privileging and processing of certain materials. In this sense of the word, and for this paper, to say that a story ‘matters’ is to say that it is just as agential in this world as humans, rocks, and CO<sub>2</sub>.

In sum, when this paper says the stories we tell *matter*, it refers to the ways in which stories give voice to the voiceless, and to the ways in which stories have material consequences in our biophysical world. With regards to climate change and our perceived inability to address it, stories – when listened to – provide not only a roadmap for understanding where we are but are also a point of departure from the status quo. The next section will engage more directly with the storied continuum of the planet’s existence and our place within it through an engagement with geologic time, life, and imagination.

## 3. Geologic time, life, and imagination

Typically, storytelling refers the uniquely human ability to communicate complex narratives to one another [23: 1]; however, this paper wants to extend storytelling beyond being solely a form of communication and into a form of understanding and doing. As it relates to climate change, this requires an extension of storytelling beyond being uniquely human to one that can include other, non-human facets of reality that make life meaningful [24]. In order to understand the magnitude of climate change, and to understand our place within it, this paper delves into the geologic record.

In reference to the Anthropocene, Matthew Coolidge, director of *The Center for Land Use Interpretation*, contends, “Every molecule on the surface of the Earth has been affected by humans” [25: 66]. To accept

the premise of the Anthropocene is to understand humans as a geologic force; it is to understand that, like the iridium layer from the Cretaceous comet, humanity has been inscribed into the Earth’s crust. As Serres [26] points out, humans act tectonically. Here, it is important to briefly acknowledge the controversy around the naming of the Anthropocene [1], namely that not all humans are responsible for this geologic moment. As is the case with climate change, humans are differentially implicated. However, it is not within the scope of this paper to parse out the important issues of justice inherent in the naming of the Anthropocene (see [27]). Rather, for the sake argument, it is important to understand that, because of human activity, there exists a new geologic layer of plastics and soot. This new layer represents almost hieroglyphically the discursive-material edges of human ingenuity and progress.

The geologic record spans time immemorial. Any particular epoch – the Paleocene, the Pleistocene, etc. – encompasses millions of years. As such, to comprehend geologic time, one has to think at the geologic scale. Thinking at this magnitude allows us to understand the myriad component parts of the changing climate [17]. It is true that present climate escalation is unprecedented, but climate change is a long geologic story. Taking geologic time into consideration allows us to simultaneously think outside of and beyond our current climate predicament while also acknowledging our place within it. It allows us to see the larger story of earth systems, feedback loops, and climate forcings, while also understanding how our lives are deeply embedded in these processes.

The concept of *geologic life* may help bring eons of time into focus. Yusoff’s [28: 780] conceptualization of geologic life takes into consideration “The intermingling of social and natural causality in anthropogenic climate change and the ‘renaturalising’ of humanity as geologic in the Anthropocene.” In other words, the idea of life itself being geologic refers to the notion that geologic fossils have played a major role in the story of human becoming, and, in turn, we are making new fossils. As such, the Anthropocene represents a new “geofomation of subjectivity” [28: 784]. While Yusoff refers to a particular human story – that of capitalist development and planetary colonization – the idea that life itself is a geologic phenomenon is helpful for framing our climate story. Climate warming is largely due to an abundance of carbon in the atmosphere, most of which has recently been deposited due to the burning of fossil fuels; however, our bodies and everything we need to sustain life on this planet are also carbon. As such, the shifting of planetary materials – of carbon from one reservoir (our bodies) to another (the atmosphere) – embeds humanity in the story of climate change. Again, this is not to suggest that *all* humans are responsible for our current climate predicament, but it is meant to indicate the inherent intermingling of ecologically and atmospherically contingent life on this planet. Further, it brings into focus our anatomical being on the one hand, and our technological prowess on the other, with the longer story of climate change, making it less abstract and more discernable. In this way, our stories converge. It is this convergence that ignites a *geologic imagination*.

To have a *geologic imagination* is to proactively think about our role in the sedimentation of the planet and to critically realize that the material of the planet is discursively mediated through our survival [29]. To imagine geologically is to *not* see the planet as inanimate, but, instead, to see it as a moving, shifting character, full of its own vitality in a longer storyline that precedes and exceeds us. We begin to see how phenomena like climate change are endemic to our being just as we are to its current configuration. We see our lives as sedimentary, creating a new sensibility about our origins and endings and, as such, open up space for a re-articulation of climate knowledge. Similarly, we can see the Anthropocene as another layer and not an end. Again, it *matters* how we tell the story.

In the same way that there is certain geologic matter that *matters* in that it is constitutive of our present climate reality (i.e., fossil fuels [28]), it *matters* how we tell the story of climate change, making sure to include all its moving geologic parts [5]. Thinking about the Anthro-

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